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The Economic A B Z's of the RAILROAD INDUSTRY

Economics and Finance Department
ASSOCIATION OF AMERICAN RAILROADS

1982

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PREFACE

The 1982 edition of the Economic ABZ's of the Railroad Industry presents basic facts describing contemporary railroad economics. The publication is offered in a simple statistical format intended for use as an educational tool -- both as a primer for those seeking the basic economic tenets of railroading and as a reference source to those able to employ such data in their endeavors. Each table has a "fighting title" -- in essence, a conclusion about some aspect of railroad economics. The tables are organized within eight major categories, as follows:

I. Consist of the Industry
II. Capital Investment
III. Cost of Operations
IV. Demand and Traffic
V. Energy
VI. Financial Performance
VII. Resource Availability and Utilization
VIII. Profiles

When the "ABZ's was first published in 1980, it was anticipated that the full report would be reissued every five years and, in each intermittent year, a supplemental document would be offered providing raw data of the prior year. In line with this plan, the first supplement was published in 1981. It has since become apparent that this document will be more useful if the complete report is republished on an annual basis.

Most of the tables included in this document present 10-year trends for the 1971-1981 period. Except where otherwise indicated, Annual Reports (R-1) and quarterly reports to the Interstate Commerce Commission provide the sources of data.

This document should be cited as a source whenever data from it are used.

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ASSOCIATION OF AMERICAN RAILROADS
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I. CONSIST OF THE INDUSTRY

TABLE I-1

RAILROADS ARE ESSENTIAL TO THE ECONOMY

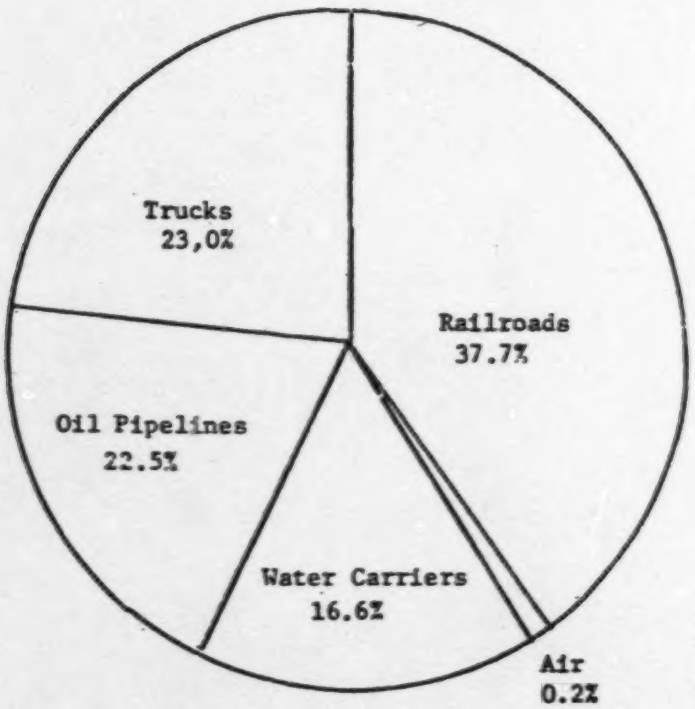
Rail Revenues Equal 1.1 Percent of GNP. (1981)

Railroads Handle 37.7 Percent of the Nation's Freight Traffic (ton-miles). (1981)

Railroads Employ 0.5 Percent of the Total Civilian Labor Force. (1981)

Railroad Investment in New Plant and Equipment Accounts for 1.4 Percent of Total Private Investments. (1981)

Intercity Ton-Miles, 1981



Source: Transportation Association of America and Association of American Railroads.

Table I-2

THE NUMBER OF RAILROADS HAS DECLINED 1/

Number of December 31	Railroads	Index
1900	1224	100
1910	1306	107
1920	1085	89
1930	775	63
1940	574	47
1950	471	38
1960	407	33
1970	351	29
1975	340	28
1980	327	27
1981	326	27

1/ All classes of railroads except switching and terminal companies.

Table I-3

THE NUMBER OF RAILROAD UNIFICATIONS HAS BEEN SIGNIFICANT

Years 1957-1982

Effective Date of Unification	Type of Unification	Applicant Railroads	Controlling Railroads
8-31-57	Merger	Nashville, Chattanooga & St. Louis	Louisville & Nashville
1-01-58	Merger	Litchfield & Madison	Chicago & North Western
10-06-58	Control	Spokane International	Union Pacific
12-01-59	Merger	Virginian	Norfolk & Western
1-28-60	Control	Toledo, Peoria & Western	Atchison, Topeka & Santa Fe and Pennsylvania
1-01-60	Merger	Charleston & Western Carolina	Atlantic Coast Line
7-01-60	Merger	Missouri-Kansas-Texas of Texas	Missouri-Kansas-Texas
10-17-60	Merger	Erie and Delaware, Lackawanna & Western	Erie-Lackawanna
11-01-60	Merger	Minneapolis & St. Louis	Chicago & North Western
1-01-61	Merger	Minneapolis, St. Paul & Sault Ste. Marie, Duluth, South Shore & Atlantic and Wisconsin Central	Soo Line
10-31-61	Merger	Texas & New Orleans	Southern Pacific
5-17-62	Control	Lehigh Valley	Pennsylvania RR
2-04-63	Control	Baltimore & Ohio	Chesapeake & Ohio
6-18-63	Control	Central of Georgia	Southern
7-01-63	Control	Georgia & Florida	Southern
9-03-63	Control	Ann Arbor	Detroit, Toledo & Ironton
1-01-64	Merger	St. Louis, San Francisco & Texas	St. Louis-San Francisco
9-25-64	Control	Kansas-Oklahoma & Gulf	Texas & Pacific
10-16-64	Merger	New York, Chicago & St. Louis	Norfolk & Western
10-16-64	Control	Akron, Canton & Youngstown	Norfolk & Western
8-01-65	Merger	Gulf, Colorado & Santa Fe and Panhandle & Santa Fe	Atchison, Topeka & Santa Fe
8-12-65	Merger	Pacific Electric	Southern Pacific
1-03-67	Control	Chicago, South Shore & South Bend	Chesapeake & Ohio
5-21-67	Control	Chicago & Eastern Illinois	Missouri Pacific
7-01-67	Merger	Atlantic Coast Line, Seaboard Air Line	Seaboard Coast Line
2-01-68	Merger	Pennsylvania RR, New York Central	Penn Central
3-29-68	Control	Western Maryland	Cheasapeake & Ohio and Baltimore & Ohio
4-01-68	Control	Erie Lackawanna	Norfolk & Western
7-01-68	Merger	Chicago Great Western	Chicago & North Western
7-01-68	Control	Delaware & Hudson	Norfolk & Western
8-01-68	Control	Alton & Southern	Missouri Pacific & Chicago & North Western 1/
1-31-69	Merger	New Orleans & Northeastern	Alabama Great Southern
7-01-69	Merger	Piedmont & Northern	Seaboard Coast Line
3-02-70	Merger	Great Northern, Northern Pacific and Chicago, Burlington & Quincy	Burlington Northern
4-01-70	Merger	Kansas, Oklahoma & Gulf	Texas & Pacific
5-31-71	Merger	Central of Georgia, Georgia & Florida, Savannah & Atlanta and Wrightsville & Tenille	Central of Georgia
7-31-71	Merger	Monon	Louisville & Nashville
8-10-72	Merger	Illinois Central and Gulf, Mobile & Ohio	Illinois Central Gulf
1-01-74	Merger	Carolina & Northwestern	Norfolk & Southern
4-01-76	Consolidation	Central Railroad of New Jersey, Erie-Lackawanna, Lehigh & Hudson Valley, Lehigh Valley, Penn Central, Reading and Ann Arbor	Consolidated Rail Corp. (Conrail)
10-16-76	Merger	Texas & Pacific and Chicago & Eastern Illinois	Missouri Pacific
11-01-78	Merger	Abilene & Southern, Fort Worth Belt, Missouri-Illinois, New Orleans & Lower Coast, St. Joseph Belt, Texas-New Mexico and Union Terminal	Missouri Pacific
11-10-78	Control	Green Bay & Western	Itel Corp.
11-01-80	Consolidation	Chessie System and Family Lines	CSX Corp.
11-21-80	Merger	Burlington Northern and St. Louis-San Francisco	Burlington Northern
1-01-82	Merger	Burlington Northern, Colorado & Southern, Fort Worth & Denver, Burlington Northern (Oregon-Washington) and Walla Walla Valley.	Burlington Northern
6-01-82	Consolidation	Southern and Norfolk & Western	Norfolk Southern Corp.

1/ In August 1973, C&NW sold its 50 percent share to St. Louis & Southwestern.

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Table I-4

RAILROADS ARE CLASSIFIED BY TYPE OF OPERATION

Year	Class I Line-Haul Railroads	Other Line-Haul Railroads	Switching & Terminal Companies	Total
1940	131	397	208	736
1945	130	355	213	698
1950	127	337	215	679
1955	126	310	207	643
1960	106	304	197	607
1965	76	302	190	568
1970	71	273	173	517
1975	73	245	159	477
1980	39	288	153	480
1981	38	288	151	477
	----------INDEX----------			
1940	100	100	100	100
1945	99	89	102	95
1950	97	85	103	92
1955	96	78	100	87
1960	81	77	95	82
1965	58	76	91	77
1970	54	69	83	70
1975	56	62	76	65
1980	30	73	74	65
1981	29	73	73	65

NOTE: A line-haul company conducts actual transportation services. A switching and terminal company performs switching service, furnishes terminal trackage, bridges, or other facilities such as union passenger or freight stations, operates ferries, or performs any one or combination of these functions. It may incidentally conduct a regular freight or passenger service. The decline in the number of Class I railroads is attributable primarily to reclassifications and consolidations. (See Table I-8).

Table I-5

LINE-HAUL RAILROADS ARE CLASSIFIED BY LEVEL OF REVENUES

Classification of Line-Haul Companies (1981)	1978 Revenue Threshold	Number of Railroads
Class I	$50,000,000 or more	38
Class II	$10,000,001 - $49,999,999	28
Class III	$ 0 - $10,000,000	260

Table I-6

CLASS I RAILROADS ARE GROUPED WITHIN GEOGRAPHIC REGIONS
(1981)

EASTERN DISTRICT:

Baltimore & Ohio
Bessemer & Lake Erie
Boston & Maine
Chesapeake & Ohio
Conrail
Delaware & Hudson
Detroit, Toledo & Ironton
Elgin, Joliet & Eastern
Grand Trunk Western
Long Island
Norfolk & Western
Pittsburgh & Lake Erie
Western Maryland

SOUTHERN DISTRICT:

Alabama Great Southern
Central of Georgia
Cincinnati, New Orleans & Tex. Pac.
Clinchfield
Florida East Coast
Illinois Central Gulf
Louisville & Nashville
Seaboard Coast Line
Southern Railway

WESTERN DISTRICT:

Atchison, Topeka & Santa Fe
Burlington Northern
Chicago & North Western
Chicago, Milwaukee, St. Paul & Pac.
Colorado & Southern
Denver & Rio Grande Western
Duluth, Missabe & Iron Range
Fort Worth & Denver
Kansas City Southern (incl. L&A)
Missouri-Kansas-Texas
Missouri Pacific
St. Louis Southwestern
Soo Line
Southern Pacific
Union Pacific
Western Pacific

Table I-7

THE RAILROAD INDUSTRY IS DOMINATED BY CLASS I CARRIERS

Category	Class I Railroads As a Percent of Total Industry (1981)
Traffic (Ton-Miles)	98%
Rail Mileage	94
Employees	92
Revenues	95

Table I-8

THE NUMBER OF CLASS I CARRIERS HAS DECLINED

Year	Class I Railroads	Index
1920	186	100
1925	174	94
1930	156	84
1935	144	77
1940	131	70
1945	130	70
1950	127	68
1955	126	68
1960	106	57
1965	76	41
1970	71	38
1975	73	39
1980	39	21
1981	38	20

NOTE: The decline in the number of Class I railroads is attributable primarily to consolidations and to frequent changes in the designation of Class I carrier based on operating revenues. Prior to January 1, 1956, Class I railroads consisted of those with annual operating revenues above $1,000,000. Effective January 1, 1956, railroads were reclassified so that Class I railroads were those having annual operating revenues of $3,000,000 or more. The base for Class I railroads was raised further to $5,000,000 effective January 1, 1965, to $10,000,000 effective January 1, 1976 and to $50,000,000 effective January 1, 1978.

Table I-9

THE DECLINE IN THE NUMBER OF
CLASS I RAILROADS HAS BEEN NATIONWIDE

Year	United States	Eastern District	Southern District	Western District
1940	131	55	26	50
1945	130	55	25	50
1950	127	54	24	49
1955	126	53	24	49
1960	106	43	24	39
1965	76	32	16	28
1970	71	32	14	25
1975	73	30	15	28
1979	40	13	9	18
1980	39	13	9	17
1981	38	13	9	16
----------INDEX----------				
1940	100	100	100	100
1945	99	100	96	100
1950	97	98	92	98
1955	96	96	92	98
1960	81	78	92	78
1965	58	58	62	56
1970	54	58	54	50
1975	56	55	58	56
1979	31	24	35	36
1980	30	24	35	34
1981	29	24	35	32

Table I-10

TEN RAILROAD SYSTEMS ACCOUNT FOR
EIGHTY-SIX PERCENT OF TOTAL RAILROAD REVENUES

(Year 1981)

	Carrier	Operating Revenues (thousands)	Percent of Total
1.	CSX	$4 900 343	15.86%
2.	Burlington Northern, Inc.	4 080 624	13.21
3.	Conrail	4 001 122	12.95
4.	Southern Pacific	2 651 695	8.58
5.	Atchison, Topeka & Santa Fe	2 370 775	7.67
6.	Union Pacific	2 100 793	6.80
7.	Missouri Pacific	1 887 660	6.11
8.	Southern	1 790 669	5.80
9.	Norfolk & Western	1 785 907	5.78
10.	Illinois Central Gulf	1 032 767	3.34
	Top 10	$26 602 355	86.10
	Others	4 296 255	13.90
	Total	$30 898 610	100.00%

Table I-11

RAILROADS PROVIDE INTERMODAL (TOFC) SERVICE

Plan I: Railroads carry trailer or container loads of freight for motor common carriers as a flat charge per unit. The railroad has no direct contact with the shipper and merely substitutes trailer - container - on flat car transportation in place of the motor common carriers' transportation by truck. The motor common carrier solicits and bills his customers at truck rates, takes trailers or containers to and picks them up from TOFC terminals.

Plan II: This is a total railroad door-to-door transportation service. The railroad furnishes all transportation equipment, delivers the trailers or containers to shipper's loading dock and, in some cases, helps load them, transports them to its loading ramp, loads and transports them to consignee's unloading dock and sometime helps unload the units.

Plan II 1/4: Same as Plan II, except railroad either picks up or delivers the trailer or container, but not both.

Plan II 1/2: Provides for the shipper and receiver to perform pick-up and delivery of railroad owned trailers or containers with railroad performing ramping and deramping and line-haul service between ramps.

Plan III: This is a railroad transportation service restricted to ramp operations. The shipper loads his own or leased trailer or container and provides for its delivery to loading ramp. The railroad loads the trailer or container on the flat car at origin piggyback terminal, transports it to destination piggyback terminal and grounds it. Cosignee provides for pick-up at destination for delivery to his unloading dock.

Plan III-Minibridge: Containerized shipments having origin or destination from or to an international foreign port and moving by rail to or from originating or final destination U.S. ports. This rail-water service is in lieu of an all-water move.

Plan III-Landbridge: Containerized shipments moving by water into U.S. Ports for transport by rail to another port for further transport by water to destination.

Plan IV: Rail Carrier handling of loaded and empty privately owned or leased trailers and flat cars between specific points or areas under charges published in regular rail tariffs. These are flat per car charges to compensate the rail carriers for service in moving the loaded or empty trailers on flat cars and not for the commodity being shipped.

Plan V: Railroads and motor common carriers participate in a joint rail-truck transportation service at a published single factor joint through rate. Each participating carrier gets a division of the through rate.

Table I-12

SOME RAILROADS BELONG TO LARGER RAILROAD SYSTEMS

Boston & Maine
Bessemer & Lake Erie [1]
CSX Corporation
  Chessie System
    Baltimore & Ohio
    Chesapeake & Ohio
    Western Maryland
  Family Lines
    Clinchfield
    Louisville & Nashville
    Seaboard Coast Line
Consolidated Rail Corporation
Delaware & Hudson
Detroit, Toledo & Ironton
Duluth, Missabe & Iron Range [1]
Elgin, Joliet & Eastern [1]
Grand Trunk Western
Long Island (Psgr. Service)
Pittsburgh & Lake Erie
Florida East Coast
Illinois Central Gulf
Norfolk Southern Corp
  Norfolk & Western
  Southern System
    Alabama Great Southern
    Central of Georgia
    Cincinnati, New Orleans & Texas Pacific
    Southern Railway
Atchison, Topeka & Santa Fe
Burlington Northern, Inc.
  Burlington Northern
  Colorado & Southern
  Fort Worth & Denver
Chicago & North Western
Chicago, Milwaukee, St. Paul & Pacific
Denver & Rio Grande Western
Kansas City Southern
Missouri-Kansas-Texas
Missouri Pacific
Soo Line
Southern Pacific
  St. Louis Southwestern
  Southern Pacific
Union Pacific
Western Pacific

[1] These railroads are independently operated, but their common stock is all held by the U. S. Steel Corporation.

Note: Some Class II and III railroads are also controlled by larger railroad systems.

Table I-13

A FEW RAILROADS ARE GOVERNMENT-OWNED

Carrier	Owned By
Alaska Railroad 1/	U.S. Government
Grand Trunk Western 2/	Canadian Government
Long Island Rail Road	State of New York
National Railroad Passenger Corporation (AMTRAK) 3/	U.S. Government

1/ Legislation is pending to transfer ownership to the State of Alaska.

2/ Owned by Canadian National Railway Co. (through Grand Trunk Corp.)

3/ Owned by Burlington Northern, Inc.; The Chicago, Milwaukee, St. Paul and Pacific RR; The Grank Trunk Western RR; and The Penn Central Corp., but funded by the Federal Government.

NOTE: Some Class II and III railroads are also government-owned.

Table I-14

SOME RAILROADS OWN MOTOR CARRIERS

Carrier	Motor Carrier Subsidiary
Atchison, Topeka & Santa Fe	Santa Fe Transportation Co.
Southern Pacific	Pacific Motor Transport Co. Pacific Motor Trucking Co. Louis Heller, Inc. Southern Pacific Transport Co. of Texas & Louisiana
St. Louis Southwestern	Southwestern Transportation Co.
Missouri Pacific	Missouri Pacific Truck Lines, Inc.
Conrail	Pennsylvania Truck Lines Excelsior Truck Leasing Co. Jersey Central Transportation Co.
Burlington Northern	BN Transport Hart Motor Express, Inc.
Denver & Rio Grande Western	Rio Grande Motor Way, Inc.
Chicago, Milwaukee, St. Paul & Pacific	Milwaukee Motor Transportation Co. M.T.I., Inc.
Union Pacific	Union Pacific Motor Freight Co.
Family Lines	Seacoast Transportation Co.
Florida East Coast	Florida East Coast Highway Dispatch Co.
Missouri-Kansas-Texas	Coordinated Transportation Co.
Western Pacific	Western Pacific Transport Co.

NOTE: Although railroads have been generally precluded from purchasing motor carriers by the Interstate Commerce Commission, a grandfather provision of the Motor Carrier Act of 1935 permitted those railroads already owning motor carriers to retain them.

Table I-15

RAILROADS ARE HEAVILY REGULATED

I. Interstate Commerce Commission:

Regulates, in varying degrees, rail operations, including rates, routes, operating rights, abandonments and mergers. Conducts investigations and awards damages where applicable and administers railroad bankruptcy. Prescribes uniform system of accounts and records and evaluates property owned or used by carriers subject to the act. Authorizes issuance of securities and assumption of obligations. Develops preparedness programs. Enactment of the Staggers Rail Act of 1980 substantially reduced the regulatory authority of the ICC, particularly in the area of rates where it retains jurisdiction only when railroads have market dominance.

II. To a Lesser Degree, Railroads Are Subject To Control By the Following Agencies:

Environmental Protection Agency

Securities and Exchange Commission

Federal Railroad Administration, DOT

Internal Revenue Service

Federal Communications Commission

Federal Trade Commission

National Transportation Safety Board

Railroad Retirement Board

Equal Employment Opportunity Commission

National Bureau of Standards

U.S. Department of Labor

II. CAPITAL INVESTMENT

Table II-I

RAILROAD CAPITAL EXPENDITURES HAVE INCREASED IN RECENT YEARS

Year	Total Capital Expenditures (million $s)	Index
1971	$ 1 178	100
1972	1 216	103
1973	1 342	114
1974	1 565	133
1975	1 790	152
1976	1 725	146
1977	2 290	194
1978	2 738	232
1979	3 325	282
1980	3 621	307
1981	2 855	242

Table II-2

THE RAILROAD CAPITAL EXPENDITURE RATIO HAS GENERALLY INCREASED

Year	Total Capital Expenditures (million $s)	Net Railway Investment (million $s)	Capital Expenditure Ratio
1971	$ 1 178	$ 28 096	4.2
1972	1 216	27 736	4.4
1973	1 342	27 979	4.8
1974	1 565	28 855	5.4
1975	1 790	29 740	6.0
1976	1 725	26 925 1/	6.4
1977	2 290	28 222	8.1
1978	2 738	28 794	9.5
1979	3 325	30 271	11.0
1980	3 621	33 217	10.9
1981	2 855	34 998	8.2 2/

1/The decline in net investment in 1976 was due to reclassifications and reductions resulting from restructuring of bankrupt eastern railroads.

2/The decline in the ratio in 1981 was attributable to a decrease in capital spending resulting from pervasive equipment surpluses.

Table II-3

MOST RAILROAD CAPITAL INVESTMENT IS IN ROLLING STOCK

Year	Rolling Stock (million $s)	Rolling Stock Percent of Total	Roadway & Structures (million $s)	Roadway & Structures Percent of Total
1971	$ 864	73.3%	$ 314	26.7%
1972	848	69.7	368	30.3
1973	893	66.5	449	33.5
1974	1 038	66.3	527	33/6
1975	1 303	72.8	486	27.2
1976	1 175	68.1	550	31.9
1977	1 540	67.2	751	32.8
1978	1 883	68.8	855	31.2
1979	2 285	68.7	1 039	31.3
1980	2 346	64.8	1 275	35.2
1981	1 521	53.3	1 334	46.7

NOTE: Rolling stock includes cars, locomotives and cabooses. Roadway includes terminals, track, bridges and structures, classification yards and port terminals.

Table II-4

OUTLAYS FOR RAILROAD EQUIPMENT LEASES
HAVE GENERALLY INCREASED IN RECENT YEARS

	Total Outlay for Leased Equipment	
Year	(millions $s)	Index
1971	332	100
1972	427	128
1973	331	100
1974	357	108
1975	291	88
1976	168	51
1977	306	92
1978	547	165
1979	642	193
1980	642	193
1981	346	104

NOTE: See Tables II-5 and II-6

Table II-5

INSTALLATIONS OF LEASED EQUIPMENT
HAVE GENERALLY DECLINED

	LEASED UNITS INSTALLED NEW	
Year	Locomotives	Freight Cars
1971	393	13 827
1972	539	14 959
1973	585	7 903
1974	568	7 591
1975	202	7 768
1976	217	2 712
1977	392	4 210
1978	466	8 342
1979	733	4 920
1980	389	8 479
1981	58	7 198
	INDEX	
1971	100	100
1972	137	108
1973	149	57
1974	145	55
1975	51	56
1976	55	20
1977	100	30
1978	119	60
1979	187	36
1980	99	61
1981	15	52

Table II-6

EXPENDITURES FOR LEASING OF NEW ROLLING STOCK
FLUCTUATE BETWEEN LOCOMOTIVES AND FREIGHT CARS

Year	Outlays For Leased Locomotives (million $s)	Outlays For Leased Locomotives Percent of Total	Outlays For Leased Freight Cars (million $s)	Outlays For Leased Freight Cars Percent of Total
1971	$106	31.9%	$226	68.1%
1972	157	36.8	270	63.2
1973	182	55.0	149	45.0
1974	192	53.8	165	46.2
1975	75	25.8	216	74.2
1976	92	54.8	76	45.2
1977	175	57.2	131	42.8
1978	273	49.9	274	50.1
1979	448	69.8	194	30.2
1980	264	41.1	378	58.9
1981	46	13.3	300	86.7

NOTE: Columns 1 and 3 represent leased equipment installed X average cost per unit for each year.

Table II-7

DIESEL LOCOMOTIVE INSTALLATIONS DECLINED SHARPLY IN 1981

Year	Diesel Locomotives Added to Fleet 1/	Index
1971	1 276	100
1972	1 577	124
1973	1 339	105
1974	1 282	100
1975	810	63
1976	509	40
1977	992	78
1978	1 368	107
1979	1 978	155
1980	1 659	130
1981	683	54

1/Includes AMTRAK beginning in 1972--Auto-Train for years 1972-1977.

Table II-8

THE NUMBER OF LOCOMOTIVES HAS REMAINED STABLE

Year	Number of Locomotives[1/]	Index
1971	27 189	100
1972	27 358	101
1973	27 790	102
1974	28 084	103
1975	28 210	104
1976	27 612	102
1977	27 667	102
1978	27 400	101
1979	28 097	103
1980	28 396	104
1981	27 688	102

1/ Includes AMTRAK beginning in 1972--Auto-Train for years 1972-1977.

NOTE: During the same span of years shown above, aggregate horsepower increased about 20 percent.

Table II-9

THE LOCOMOTIVE FLEET IS OVERWHELMINGLY DIESEL-POWERED

Year	Locomotives in Service 1/			
	Total	Diesel	Electric	Other
1971	27 189	26 897	250	42
1972	27 358	27 064	252	42
1973	27 790	27 540	238	12
1974	28 084	27 857	215	12
1975	28 210	27 985	213	12
1976	27 612	27 383	217	12
1977	27 667	27 450	205	12
1978	27 400	27 184	204	12
1979	28 097	27 922	163	12
1980	28 396	28 243	141	12
1981	27 688	27 612	74	2

1/Includes AMTRAK beginning in 1972--Auto-Train for years 1972-1977.

Table II-10

FORTY-FIVE PERCENT OF THE PRESENT LOCOMOTIVE FLEET HAS BEEN ADDED SINCE 1970

Age Distribution of Locomotive Fleet - (December 31, 1981)

Date Built*	Number of Locomotives in Age Bracket	Percent of Diesel Locomotives in Age Bracket
Jan. 1, 1980-Dec. 31, 1981	1 943	7.1%
Jan. 1, 1975-Dec. 31, 1979	4 947	18.1
Jan. 1, 1970-Dec. 31, 1974	5 333	19.6
Jan. 1, 1965-Dec. 31, 1969	5 023	18.4
Jan. 1, 1960-Dec. 31, 1964	2 304	8.5
Before Jan. 1, 1960	7 719	28.3
TOTAL	27 269 1/	100.0

1/Will not agree with total shown in Table II-9 which is from a different source.

* Disregarding year of rebuilding.

Table II-11

FREIGHT CAR INSTALLATIONS DECLINED IN 1981

Year	FREIGHT CARS ADDED TO FLEET		
	Railroads	Other Railroads & "Private" Companies	Total
1971	46 423	14 210	60 633
1972	36 994	12 988	49 982
1973	33 752	25 418	59 170
1974	33 745	33 664	67 409
1975	40 986	33 006	73 992
1976	31 757	21 873	53 630
1977	29 478	24 339	53 817
1978	29 067	41 391	70 458
1979	31 986	64 546	96 532
1980	31 006	55 622	86 628
1981	21 063	24 938	46 001
	----------INDEX----------		
1971	100	100	100
1972	80	91	82
1973	73	179	98
1974	73	237	111
1975	88	232	122
1976	68	154	88
1977	63	171	89
1978	63	291	116
1979	69	454	159
1980	67	391	143
1981	45	175	76

NOTE: "Private" companies include shippers and car companies, some of the latter being railroad-owned.

Source: American Railway Car Institute and Transportation Division, AAR.

Table II-12

THE NUMBER OF FREIGHT CARS HAS DECLINED

Year	Number of Cars[1/]	Index
1971	1 762 135	100
1972	1 716 937	97
1973	1 710 659	97
1974	1 720 573	98
1975	1 723 605	98
1976	1 699 027	96
1977	1 666 533	95
1978	1 652 774	94
1979	1 700 310	96
1980	1 710 827	97
1981	1 672 565	95

1/ Includes cars owned by all U.S. railroads and private car lines.

NOTE: Despite the decline in the number of cars, the aggregate fleet capacity has increased by 11.5 percent since 1971.

Source: American Railway Car Institute and Transportation Division, AAR.

Table II-13

THE NUMBER OF CARS IN THE FREIGHT CAR FLEET VARIES BY CAR TYPE

	Revenue Freight Cars In Service - All Railroads and Private Car Lines								
Dec. 31	Plain Box	Equipped Box	Gondola	Hopper	Covered Hopper	Flat	Refrigerator	Tank	Other
1969	394 005	162 154	198 448	403 603	161 022	122 241	115 844	180 761	51 550
1970	375 668	171 237	196 231	399 498	170 742	128 359	116 026	174 749	49 512
1971	357 777	176 644	190 758	396 888	179 875	128 161	111 647	169 923	46 294
1972	340 163	181 131	188 713	383 242	186 219	125 554	107 023	162 350	42 542
1973	333 607	178 329	187 347	365 333	204 926	132 222	104 721	165 309	38 865
1974	328 028	178 169	186 720	356 626	219 362	139 186	104 024	169 237	39 221
1975	321 480	173 679	186 773	363 186	228 265	141 316	100 815	170 876	37 215
1976	302 899	171 054	185 776	365 526	230 069	141 781	98 017	168 018	35 887
1977	280 367	170 412	179 475	359 168	235 829	142 811	93 823	169 745	34 903
1978	262 986	172 685	175 777	354 086	246 087	146 402	87 601	174 170	32 980
1979	274 002	179 217	178 979	356 504	268 919	151 377	81 266	178 069	31 977
1980	251 420	179 944	184 875	347 867	299 986	152 661	79 370	183 989	30 715
1981	222 747	172 428	183 692	339 435	311 378	148 724	73 452	190 662	30 047
	INDEX								
1969	100	100	100	100	100	100	100	100	100
1970	95	106	99	99	106	105	100	97	96
1971	91	109	96	98	112	105	96	94	90
1972	86	112	95	95	116	103	92	90	83
1973	85	110	94	91	127	108	90	91	75
1974	83	110	94	88	136	114	90	94	76
1975	82	107	94	90	142	116	87	94	72
1976	77	105	94	91	143	116	85	93	70
1977	71	105	90	89	146	117	91	94	68
1978	67	106	89	88	153	120	76	96	64
1979	70	111	90	88	167	124	70	99	62
1980	64	111	93	86	186	125	69	102	60
1981	57	94	93	84	193	122	63	105	58

Source: American Railway Car Institute and Transportation Division, AAR.

Table II-14

NEARLY FORTY PERCENT OF THE FREIGHT CAR FLEET
IS LESS THAN TEN YEARS OLD

Age Distribution of Railroad-owned Freight Cars-(As of February 1981)

Car Age (years)	Number of Cars in Age Bracket (thousands)	Percent of Cars in Age Bracket
0-10	541	38.5%
11-20	530	37.7
21-30	265	18.8
31-40	58	4.1
Over 40	12	0.9
Total	1 406	100.0

Source: UMLER file, Transportation Division, AAR.

Table II-15

NEW RAIL LAID ANNUALLY HAS GENERALLY INCREASED

Year	Tons of New Rail Laid	Index
1971	648 625	100
1972	675 796	104
1973	698 506	108
1974	708 362	109
1975	537 537	83
1976	802 441	124
1977	952 144	147
1978	838 714	129
1979	1 064 827	164
1980	881 815	136
1981	776 557	120

NOTE: Includes rail laid in replacement and in additional tracks, new lines and extensions.

Table II-16

NEW CROSSTIES LAID ANNUALLY HAVE GENERALLY INCREASED

Year	Crossties laid (thousands)	Index
1971	22 777	100
1972	22 251	98
1973	19 893	87
1974	21 175	93
1975	20 548	90
1976	27 002	119
1977	27 270	120
1978	27 228	120
1979	26 667	117
1980	25 984	114
1981	26 247	115

NOTE: Includes ties laid in replacement and in additional tracks, new lines and extensions.

Table II-17

RAILROAD MILEAGE HAS DECREASED

Year	Miles of Railroad Line Owned[1/]	Index
1971	205 220	100
1972	203 299	99
1973	201 585	98
1974	200 916	98
1975	199 216	97
1976	192 396	94
1977	191 205	93
1978	190 555	93
1979	184 500	90
1980	179 000	87
1981	168 000	82

1/ Excludes yard tracks and sidings. Jointly-used track is counted only once.

NOTE: Mileage is partially-estimated beginning with 1977.

Table II-18

COVERED HOPPERS HAVE DOMINATED FREIGHT CAR DELIVERIES IN RECENT YEARS

Car Types	Freight Car Deliveries					
	1976	1977	1978	1979	1980	1981
Boxcars	10 528	11 391	19 594	32 190	14 239	1 571
Flatcars	2 606	5 441	5 816	7 518	5 817	5 449
Gondolas	5 390	2 609	4 451	6 440	12 894	6 882
Open top hoppers	18 080	11 062	14 835	13 711	10 091	6 766
Covered hoppers	7 584	10 500	14 060	22 215	26 731	17 414
Refrigerators	326	1 365	500	540	992	460
Tank cars	5 138	7 207	8 489	9 884	10 942	8 577
Others	2 671	2 064	1 379	3 152	3 759	1 706
Total New	52 323	51 639	69 124	95 650	85 465	44 825
Rebuilt	1 307	2 178	1 334	882	1 163	1 100
	53 630	53 817	70 458	96 532	86 628	45 925

Source: American Railway Car Institute and Transportation Division, AAR.

Table II-19

THE 3000-HORSEPOWER UNIT WAS THE PREDOMINANT TYPE OF NEW LOCOMOTIVE INSTALLED IN 1981

Horsepower	Installed	Percent of Total
2 000	51	13.7
2 250	49	13.1
3 000	225	60.3
3 500	37	9.9
3 600	11	3.0
Total	373	100.0

1/ Includes only those units for which cost data are complete. Therefore, total will not agree with installations shown in Table II-7.

Table II-20

SEVENTY FIVE PERCENT OF RAIL WEIGHS
MORE THAN 100 POUNDS PER YARD

Weight of Rail (Pounds Per Yard)	Miles	Percent of Total Miles	Cumulative Percent
150 - 159	662.04	0.36%	0.36%
140 - 149	3 829.88	2.11	2.47
130 - 139	60 524.60	33.34	35.81
120 - 129	7 034 68	3.88	39.69
110 - 119	48 104 74	26.50	66.19
100 - 109	15 756.51	8.68	74.87
90 - 99	21 275.20	11.72	86.59
0 - 89	24 340 73	13.41	100.00
Total	181 528.38	100.00	-

NOTE: The average weight of all rail in place in 1980 was 112.50 pounds per yard.

Table II-21

FREIGHT CAR SERVICE LIFE AND SALVAGE VALUE
FLUCTUATE BY CAR TYPE

Description	Service Life	Salvage (%)	Annual Rate (%)
Plain Box Cars - 40'	24	22%	3.25%
Plain Box Cars - 50 and long Box Cars	25	19	3.24
Equipped Box Cars	26	17	3.19
Plain Gondola Cars	27	22	2.89
Equipped Gondola Cars	34	14	2.53
Covered Hopper Cars	29	17	2.86
Open Top Hopper Cars General Service	23	23	3.35
Open Top Hopper Cars Special Service	38	23	2.03
Refrigerator Cars - Non-mechanical	25	11	3.56
Refrigerator cars Mechanical	26	12	3.38
Flat Cars - TOFC/COFC	29	18	2.83
Flat Cars - Multi-level	25	11	3.56
Flat Cars - General Service	33	22	2.36
Flat Cars - Other	37	18	2.22
All Other Freight Cars (Excl. Cabooses)	30	17	2.77

Source: Interstate Commerce Commission, Ex Parte 334 (Decision August 1, 1977).

Table II-22

RAILROADS USE THREE TYPES OF EQUIPMENT FINANCING

	Equipment Trust Certificate-ETC (Philadelphia Plan)	Conditional Sales Agreement-CSA (New York Plan)	Lease Arrangement
HISTORY	Began regular use in 1870. In 1950 adopted universally accepted form.	Popularity began in early 1900's. By 1940 the ICC stopped regulating CSA's.	Started by Equitable Life in 1949. Aided by investment tax credit in 1962. First RR leveraged lease was with Chessie in 1968.
OVERVIEW	Railroad contracts with Trustee (a commerical bank) to buy equipment from manufacturer. Trustee sells ETC's to investment bank with the lowest bid. Investors purchase from investment bank. Trustee issues certificate to investors.	Railroad buys equipment from manufacturer and issues it a CSA. Manufacturer assigns CSA to a Trustee (a commerical bank). Investment bank finds investors for private placement. Trustee issues certificates to investors.	Investor buys equipment from manufacturer. Railroad makes regular payments to investor for use of equipment. Investors make use of investment tax credit, depreciation, and borrowing capacity and rent equipment to railroad. Railroad and investor benefit.
TYPICAL TERMS	Type: Serial Maturity: 15 years Equity Participation: 20% Coupon: every six months Call Provisions: non-callable	Type: Serial Maturity: 15 years Equity Participation: 0 - 20% Coupon: every six months Call Provisions: some have a pre-payment provision	Type: Various Term: one day to 20 years Initial Equity: 0% but ownership may transfer
OWNERSHIP INTEREST	Trustee retains security interest and passes title when debt is repaid.	Trustee retains security interest and passes title when debt is repaid.	Varies with lease provisions. Ownership may gradually transfer or railroad may acquire purchase options.
PRIMARY INVESTORS	Insurance companies Institutions Savings & Loans Individuals	Insurance companies Institutions	Individuals Finance companies
REGULATION	Railroad ETC's must be approved by the ICC and competitively bid. (For private car lines, approval not required).	Does not require ICC approval and is privately placed.	None
RAILROAD FINANCIAL BENEFITS	Low cost financing plus investment tax credit and depreciation write-offs.	Low cost financing, no required equity, and investment tax credit and depreciation write-offs.	No investment, limited risk, and possible lower cost. May not require capitalization on balance sheet.
INVESTOR BENEFITS	Higher yield than Treasuries with minimal additional risk. Varying maturities.	Higher yield than ETC's with minimal additional risk. Tailored to investor needs.	Provides tax shelter and leverage.
INVESTOR RISKS	Default: None Liquidity: similar to municipal bonds.	Default: None Liquidity: no active markets.	Many
PROTECTION	Section 77J of Bankruptcy Act; Section 1168 of Bankruptcy Reform Act (10/79); McHaffie Act; and Interstate Commerce Act. Plus underlying equipment value.	Section 77J of Bankruptcy Act; Section 1168 of Bankruptcy Reform Act (10/79); McHaffie Act; and Interstate Commerce Act. Plus underlying equipment value.	Underlying equipment value.

Sources: Railroad Equipment Trust Certificates, Merrill Lynch White Weld.
Railroad Equipment Obligations, M. D. Rice.
Railroad Equipment Trust Certificates, Salomon Brothers Inc.
Railroad Equipment Financing, D. M. Street.

III. COST OF OPERATIONS

Table III-1

RAILROAD EXPENSES ARE DIVIDED
INTO FOUR SERVICE AREAS

(YEAR 1981)

Expense Category	Amount 1/ (million $s)	Percent of Total
Way & Structures	$ 5 520	19.4%
Equipment	6 842	24.0
Transportation	13 549	47.6
General & Administrative	2 565	9.0
Total	$28 476	100.0

1/ Excludes Federal Income Taxes and Interest Expense.

Table III-2

RAILROAD EXPENSES ARE DIVIDED
INTO SEVEN FUNCTIONAL AREAS

(Year 1981 prel.)

Expense Category	Amount (million $s)	Percent of Total
Labor	$13 995	45.8%
Wages charged to expenses	11 068	36.2
Payroll taxes	1 881	6.2
Health & welfare	1 046	3.4
Fuel and Power - loco	3 835	12.6
Income Taxes	960	3.1
Depreciation	1 212	4.0
Loss and Damage, Injuries & Insurance	922	3.0
Other Expenses 1/	8 512	27.8
Fixed and Contingent Charges	1 133	3.7
Total	$30 569	100.0%

1/ Other materials and supplies and miscellaneous, equipment and joint facility rents, current taxes (other than payroll and income taxes), retirement charges, and rent for/income from leased roads and equipment.

Table III-3

RAILROAD OPERATING COSTS HAVE INCREASED SHARPLY

Year	Freight Service Costs 1/ (million $s)	Revenue Ton-Miles (millions)	Cost Per Ton-mile	Index
1971	$11 234	739 743	1.519¢	100
1972	11 976	776 746	1.542	102
1973	13 258	851 809	1.556	102
1974	15 099	850 961	1.774	117
1975	15 204	754 252	2.016	133
1976	17 099	794 059	2.153	142
1977	18 756	826 292	2.270	149
1978	20 244	858 105	2.359	155
1979	23 114	913 669	2.530	167
1980	25 223	918 621	2.746	181
1981	27 366	911 705	3.002	198

1/ Expenses for all years restated on basis of 1978 Uniform System of Accounts.

Table III-4

RAILROAD WAGE RATES HAVE INCREASED STEADILY

Year	Average Straight-Time Earnings Per Hour	Index
1971	$4.84	100
1972	5.32	110
1973	5.83	120
1974	6.16	127
1975	6.77	140
1976	7.49	155
1977	8.15	168
1978	8.85	183
1979	9.66	200
1980	10.74	222
1981	11.89 p	246

Source: ICC Wage Statistics, Forms A and B.

p: preliminary

Table III-5

RAILROAD FRINGE BENEFIT EXPENSES HAVE INCREASED SHARPLY

Year	Per Straight-Time Hour Paid For: Payroll Taxes	Health & Welfare
1971	$0.534	$0.338
1972	0.586	0.407
1973	0.772	0.434
1974	1.066	0.468
1975	1.129	0.520
1976	1.318	0.666
1977	1.470	0.716
1978	1.575	0.781
1979	1.751	0.867
1980	1.832	0.874
1981	2.258	1.027
-----	INDEX	-----
1971	100	100
1972	110	120
1973	145	128
1974	200	138
1975	211	154
1976	247	197
1977	275	212
1978	295	231
1979	328	257
1980	343	259
1981	423	304

Source: AAR Cost Index.

Table III-6

RAILROAD FUEL PRICES HAVE INCREASED AT A PRECIPITOUS PACE

Date	Diesel Fuel-Price Per Gallon (cents)	Index
1971	10.88	100
1972	10.97	101
1973	13.49	124
1974	26.59	244
1975	30.00	276
1976	32.38	298
1977	36.38	334
1978	37.90	348
1979	57.58	529
1980	83.00	763
1981	100.23	921

Table III-7

RAILROAD DEPRECIATION EXPENSES HAVE INCREASED

Year	Road (million $s)	Index	Equipment (million $s)	Index
1971	$ 171	100	$ 632	100
1972	171	100	633	100
1973	172	101	634	100
1974	178	104	641	101
1975	186	109	668	106
1976	164	96	672	106
1977	158	92	719	114
1978	165	96	810	128
1979	174	102	846	134
1980	188	110	961	152
1981	207	121	1 005	159

Table III-8

RAILROAD TAXES HAVE INCREASED

(million $s)

Year	Payroll Taxes	Federal Income Taxes	Deferred Income Taxes	State & Local Taxes	All Other Taxes	Total
1971	$ 578	$108	$100	$400	$ 4	$1 190
1972	622	113	174	404	4	1 317
1973	805	130	199	409	4	1 547
1974	1 118	217	211	441	4	1 991
1975	1 089	58	115	441	4	1 707
1976	1 263	163	70	425	6	1 927
1977	1 399	60	176	423	6	2 064
1978	1 458	149	93	438	5	2 143
1979	1 625	144	211	420	11	2 411
1980	1 649	224	279	418	8	2 578
1981	1 882	37	923	447	2	3 291
----------	----------	----------	INDEX	----------	----------	----------
1971	100	100	100	100	100	100
1972	108	105	174	101	100	111
1973	139	120	199	102	100	130
1974	193	201	211	110	100	167
1975	188	54	155	110	100	143
1976	219	151	70	106	150	162
1977	242	56	176	106	150	173
1978	252	136	93	110	125	180
1979	281	133	211	105	275	203
1980	285	207	279	105	200	217
1981	326	34	923	112	50	277

Table III-9

RAILROAD FIXED CHARGES HAVE INCREASED

Year	Long-Term Debt Due After One Year (million $s)	Interest Charges on Funded Debt (million $s)	Interest Charges As A Percent of Long-Term Debt
1971	$10 950	$ 552	5.0%
1972	10 925	556	5.1
1973	11 012	584	5.3
1974	11 065	628	5.7
1975	11 347	653	5.8
1976	10 268	641	6.2
1977	11 168	683	6.1
1978	11 413	768	6.7
1979	11 646	818	7.0
1980	12 626	961	7.6
1981	12 376	1 082	8.7
----------	----------	INDEX ----------	----------
1971	100	100	100
1972	100	101	102
1973	101	106	106
1974	101	114	114
1975	104	118	116
1976	94	116	124
1977	102	124	122
1978	104	139	134
1979	106	148	140
1980	115	174	152
1981	113	196	174

NOTE: Decline in long-term debt in 1976 was due to Conrail write-offs.

Table III-10

RELATIVE FREIGHT LOSS AND DAMAGE CLAIMS HAVE DECLINED

Year	Freight Loss & Damage Claims (million $s)	Percent of Gross Freight Revenue
1971	$ 235	1.88%
1972	235	1.74
1973	233	1.56
1974	293	1.71
1975	313	1.83
1976	266	1.36
1977	278	1.31
1978	304	1.32
1979	328	1.35
1980	324	1.08
1981	257	0.75

Source: AAR, Freight Claim and Damage Prevention Division.

Table III-11

RAILROAD INTEREST RATES ON EQUIPMENT
OBLIGATIONS HAVE INCREASED

Year	Interest Rates on New Equipment Obligations 1/	Embedded Interest Rates on Equipment Obligations
1951	2.73%	2.39%
1955	3.08	2.82
1960	4.63	3.70
1965	4.52	4.30
1970	8.76	6.09
1975	8.86	7.60
1978	8.90	7.90
1979	9.85	n.a
1980	12.20	n.a
1981	14.00	n.a
----------INDEX----------		
1951	100	100
1955	113	118
1960	170	155
1965	166	180
1970	321	255
1975	325	318
1978	326	331
1979	361	--
1980	447	--
1981	513	--

Note: Beginning with 1975, data are partially estimated.

1/ Equipment trust certificates and conditional sales agreements.

Table III-12

RAILROAD CONSTRUCTION COSTS HAVE ESCALATED SHARPLY

Year	Estimated Cost For Constructing One Mile of Track (thousand $s)	Index
1976	$212	100
1977	223	105
1978	241	114
1979	270	127
1980	324	153
1981	346	163

NOTE: Based on January 1 material price levels plus estimated labor costs. Grading costs are not included.

Source: Underlying data for AAR Cost Index and A Guide to Railroad Cost Analysis, AAR.

Table III-13

THE COST OF NEW LOCOMOTIVES HAS QUINTUPLED

Year	Average Cost of New Diesel Locomotives 1/	Index
1950	$140 944	100
1955	167 758	119
1960	211 303	150
1965	219 984	156
1970	240 690	171
1975	372 000	264
1978	585 000	415
1979	611 000	434
1980	679 000	482
1981	795 000	564

1/ Weighted average of new units written into the account in each year.

Table III-14

THE COST OF NEW FREIGHT CARS HAS INCREASED EIGHT-FOLD

Year	Average Cost of New Freight-Train Cars 1/	Index
1950	$ 5 300	100
1955	7 839	148
1960	11 115	203
1965	15 466	292
1970	17 199	325
1975	27 921	527
1980	45 055	850
1981	42 014	792

1/ Weighted average of new freight cars written into the account in each year.

Table III-15

THE AVERAGE COST OF ALL FREIGHT CAR TYPES HAS INCREASED SHARPLY 1/

Year	Box Cars		Flat Cars		Gondola Cars	Hopper Cars		Refrigerator Cars	Tank Cars	All Freight Carrying Cars	Caboose Cars	All Freight-Train Cars
	General Service	Special Service	General Service	Special Service		Open Top	Covered					
1971	$14 219	$18 640	$10 495	$19 068	$15 749	$13 197	$15 930	$32 167	--	$16 293	$24 874	$16 352
1972	19 258	23 533	--	17 666	15 111	15 580	18 079	32 427	--	18 051	25 640	18 219
1973	18 000	22 000	--	18 000	15 600	16 000	18 000	30 000	$20 000	18 800	29 000	18 900
1974	22 900	34 000	28 000	20 000	21 500	18 800	20 000	--	21 700	21 800	31 000	21 900
1975	31 168	37 005	32 815	40 201	27 076	25 834	26 480	42 553	22 300	27 777	41 023	27 921
1976	30 923	35 644	27 040	45 695	26 856	25 495	27 497	--	--	27 983	41 648	28 099
1977	36 791	46 643	31 515	34 852	26 906	28 026	28 545	51 179	--	31 053	48 888	31 114
1978	34 998	44 931	36 747	55 153	29 851	27 071	32 950	--	--	32 918	48 333	33 284
1979	41 755	50 160	--	52 346	31 760	34 585	36 858	57 970	--	39 387	60 417	39 449
1980	45 586	53 209	46 440	49 935	45 895	40 348	43 618	70 424	53 133	44 547	68 809	45 055
1981	--	60 568	32 536	52 956	38 378	40 438	41 860	--	50 943	41 747	59 233	42 014

1/ The variations in the average cost of freight cars from year to year relate, in part, to changes in the mix of car sub-types within each category and to differences in the capacities of cars installed. The average cost of special service flat cars for 1981 excludes 43 ten-pack articulated TOFC flats at a unit price of $188,558.

IV. DEMAND AND TRAFFIC

Table IV-1

TRANSPORTATION IS A DERIVED DEMAND

Year	GNP Economic Indicators		Total Intercity Ton-Miles (billions)
	GNP [1] (billion $s)	IIP	
1971	$2 194	100	1 954
1972	2 319	109	2 073
1973	2 452	118	2 232
1974	2 437	118	2 215
1975	2 408	107	2 066
1976	2 538	119	2 209
1977	2 678	126	2 331
1978	2 813	133	2 427
1979	2 892	139	2 596
1980	2 882	134	2 503
1981	2 938	138	2 459
	----------INDEX----------		
1971	100	100	100
1972	106	109	106
1973	112	118	114
1974	111	118	113
1975	110	107	106
1976	116	119	113
1977	122	126	119
1978	128	133	124
1979	132	139	133
1980	131	134	128
1981	134	138	126
Average Annual Increase	3.4	3.8	2.6

1/ GNP expressed in 1981 dollars.

Source: Gross National Product, Bureau of Economic Analysis; Index of Industrial Production, Board of Governors of the Federal Reserve System; and intercity ton-miles for 1977-1981, Transportation Association of American and Association of American Railroads.

Table IV-2

RAILROAD DEMAND HAS LAGGED BEHIND TOTAL TRANSPORT DEMAND

Year	Total Intercity Ton-Miles (billions)	Railroad Ton-Miles 1/ (billions)	Railroad Tons Originated 1/ (millions)
1971	1 954	740	1 391
1972	2 073	777	1 448
1973	2 232	852	1 532
1974	2 212	851	1 531
1975	2 066	754	1 395
1976	2 209	794	1 407
1977	2 331	826	1 395
1978	2 427	858	1 390
1979	2 596	914	1 502
1980	2 503	919	1 492
1981	2 459	912	1 453
----------	INDEX	----------	
1971	100	100	100
1972	106	105	104
1973	114	115	110
1974	113	115	110
1975	106	102	100
1976	113	107	101
1977	119	112	100
1978	124	116	100
1979	133	123	108
1980	128	124	107
1981	126	123	104
Average Annual Change	2.6	2.3	0.4

1/ Class I railroads only.

NOTE: Total intercity ton-miles for 1977-81 from Transportation Association of America--prior years from ICC reports.

Table IV-3

THE DECLINE IN THE RAILROAD SHARE OF INTERCITY FREIGHT TRAFFIC HAS BEEN REVERSED

Percentage of Intercity Ton-Miles

Year	Railroads 1/	Trucks	Oil Water	Pipelines	Air
1971	38.2	22.8	16.1	22.7	0.2
1972	37.8	22.7	16.3	23.0	0.2
1973	38.4	22.6	16.1	22.7	0.2
1974	38.6	22.3	16.1	22.8	0.2
1975	36.7	22.0	16.5	24.6	0.2
1976	36.3	23.2	16.9	23.4	0.2
1977	36.1	24.1	15.9	23.7	0.2
1978	35.2	24.3	16.6	23.7	0.2
1979	36.0	23.6	16.6	23.6	0.2
1980	37.2	22.7	16.4	23.5	0.2
1981	37.7	23.0	16.6	22.5	0.2

1/ Includes all line-haul railroads.

Source: Data for 1977-81 from the AAR and Transportation Association of America -- prior years from reports of Interstate Commerce Commission and Corps of Engineers.

Table IV-4

THE RAILROAD SHARE OF INTERCITY TRANSPORTATION REVENUES HAS DECLINED

Total Revenues of ICC and CAB Regulated Carriers (millions $s) 1/

Year	Railroads	Trucks	Water	Air	Bus	Total
1969	$11 964	$13 500	$ 450	$6 576	$1 007	$33 497
1974	17 903	22 700	879	11 663	1 359	54 504
1976	19 642	26 000	1 035	13 998	1 410	62 085
1977	21 214	31 000	924	15 934	1 387	70 459
1978	23 190	36 500	1 321	18 827	1 221	81 059
1979	26 198	41 200	1 517	22 217	1 436	92 568
1980	29 649	43 000	1 830	27 331	1 712	103 522
			PERCENT OF TOTAL			
1969	35.7%	40.3%	1.4%	19.6%	3.0%	100.0
1974	32.9	41.6	1.6	21.4	2.5	100.0
1976	31.6	41.9	1.7	22.5	2.3	100.0
1977	30.1	44.0	1.3	22.6	2.0	100.0
1978	28.6	45.0	1.7	23.2	1.5	100.0
1979	28.3	44.5	1.6	24.0	1.6	100.0
1980	28.6	41.5	1.8	26.4	1.7	100.0

1/ Excludes oil pipelines, freight forwarders and REA Express.

Source: Transportation Association of America.

Table IV-5

THE RAILROAD SHARE OF INTERCITY PASSENGER TRAFFIC HAS DECLINED [1]

	Percentage of Total Intercity Passenger-Miles			
Year	Railroads [2]	Bus	Air	Water
1971	6.0	17.1	74.2	2.7
1972	5.4	15.8	76.3	2.5
1973	5.5	14.8	77.3	2.4
1974	5.9	15.1	76.7	2.3
1975	5.8	14.2	77.7	2.3
1976	5.5	13.1	79.3	2.1
1977	5.1	12.6	80.4	1.9
1978	4.6	11.1	82.6	1.7
1979	4.5	10.6	83.3	1.6
1980	4.6	11.2	82.6	1.6
1981	4.8	11.1	82.5	1.6

[1] Excludes passenger traffic of automobiles and private aircraft.

[2] Includes all railroads.

Source: Data for water carriers from Corps of Engineer--other figures for 1977-81 from Transportation Association of America. All other data from ICC reports.

Table IV-6

RAILROAD DEMAND FLUCTUATES AMONG GEOGRAPHIC DISTRICTS

Year	Ton-Miles in Millions			
	United States	Eastern District	Southern District	Western District
1971	739 743	225 619	139 660	374 464
1972	776 746	231 221	147 116	398 410
1973	851 809	245 022	157 879	448 907
1974	850 961	248 398	160 668	441 895
1975	754 252	217 909	140 261	396 083
1976	794 059	216 644	151 020	426 395
1977	826 292	211 278	160 689	454 326
1978	858 105	197 633	162 417	498 056
1979	913 669	214 116	165 188	534 365
1980	918 621	202 036	169 985	546 601
1981	911 705	196 100	167 534	548 071
	INDEX			
1971	100	100	100	100
1972	105	102	105	106
1973	115	109	113	120
1974	115	110	115	118
1975	102	97	100	106
1976	107	96	108	115
1977	112	94	115	121
1978	116	88	116	133
1979	124	95	118	143
1980	124	90	122	146
1981	123	87	120	146
Average Annual Change	2.3	(1.3)	2.0	4.6

Table IV-7

RAILROAD DEMAND FLUCTUATES AMONG COMMODITIES

(Millions of Tons Originated)

Commodity	STCC No.	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Farm Products	01	119.3	134.2	121.6	125.8	156.1	142.2	134.4	135.4	121.9	128.7	138.5	156.1	139.9
Metallic Ores	10	126.4	126.7	110.4	110.0	125.1	126.5	106.4	97.9	83.2	112.5	83.1	105.4	113.8
Coal	11	383.0	404.6	360.6	375.0	376.1	390.9	407.6	407.5	414.9	383.1	473.7	522.1	527.6
Nonmetallic Minerals	14	171.4	161.3	157.8	164.7	170.5	171.0	150.6	135.6	139.6	134.7	132.2	124.8	110.0
Food and Kindred Products	20	107.7	110.1	106.4	106.1	106.0	107.3	100.2	101.9	98.7	95.4	93.2	91.9	82.8
Lumber and Wood Products	24	99.9	101.9	104.7	110.0	108.9	105.3	88.6	99.6	99.3	95.1	92.9	85.5	80.3
Pulp, Paper and Allied Products	26	42.5	42.5	42.2	44.3	46.5	48.2	40.6	44.2	44.9	41.4	42.4	42.1	41.6
Chemicals and Allied Products	28	92.1	91.6	90.8	95.2	99.7	101.4	91.4	100.7	104.3	106.7	112.4	108.3	105.9
Petroleum and Coal Products	29	34.6	36.3	34.2	48.0	52.6	53.0	45.8	46.4	46.2	44.4	43.7	38.1	39.0
Stone, Clay and Glass Products	32	77.9	71.1	69.9	73.5	72.6	68.0	56.8	57.3	59.9	59.9	61.4	53.7	49.2
Primary Metal Products	33	87.1	82.2	72.1	60.9	71.4	70.3	51.4	53.1	55.2	60.1	63.9	52.7	53.3
Transportation Equipment	37	28.8	24.2	29.5	31.4	34.3	29.8	27.3	32.6	33.6	32.2	30.6	23.9	22.2
Waste and Scrap Material	40	41.8	39.8	37.5	39.8	44.7	48.1	38.2	37.5	36.1	37.8	38.5	34.3	34.1
						INDEX								
Farm Products	01	100	112	102	105	131	119	113	113	102	108	116	131	117
Metallic Ores	10	100	100	87	87	99	100	84	77	66	89	66	83	90
Coal	11	100	106	94	98	98	102	106	106	108	100	124	136	138
Nonmetallic Materials	14	100	94	92	96	99	100	88	79	81	79	77	73	64
Food and Kindred Products	20	100	102	99	99	98	100	93	95	92	89	87	85	77
Lumber and Wood Products	24	100	102	105	110	109	105	89	100	99	95	93	86	80
Pulp, Paper and Allied Products	26	100	100	99	104	109	113	96	104	106	97	100	99	98
Chemicals and Allied Products	28	100	99	99	103	108	110	99	109	113	116	122	118	115
Petroleum and Coal Products	29	100	105	99	139	152	153	132	134	134	128	126	110	113
Stone, Clay and Glass Products	32	100	91	89	94	93	87	73	74	77	77	79	69	63
Primary Metal Products	33	100	94	83	70	82	81	59	61	63	69	73	61	61
Transportation Equipment	37	100	84	102	109	119	103	95	113	117	112	106	100	93
Waste and Scrap Material	40	100	95	90	95	107	115	91	90	86	90	92	82	82

Source: ICC Freight Commodity Statistics.

Table IV-8

THE SEASONALITY OF RAILROAD DEMAND VARIES AMONG COMMODITIES

Commodity	1979 Carloadings (000)				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
Grain	282	346	387	412	1 428
Other Farm Products	52	56	43	72	223
Metallic Ores	338	476	528	424	1 766
Coal	1 120	1 401	1 324	1 410	5 254
Crushed Stone, Gravel & Sand	171	241	241	201	853
Non-Metallic Minerals	174	197	215	197	783
Grain Mill Products	229	231	225	232	917
Food & Kindred Products	238	239	237	240	953
Primary Forest Products	260	271	263	261	1 055
Lumber & Wood Products	146	163	155	134	597
Pulp, Paper & Allied Products	264	286	274	272	1 096
Chemicals & Allied Products	380	390	358	360	1 488
Stone, Clay & Glass Products	214	256	248	227	944
Coke	94	99	88	78	360
Metals & Products (Exc. Coal)	239	280	242	223	984
MVs & Equipment	318	327	226	251	1 122
Waste & Scrap Mtrl.	176	191	178	168	713
All Other Traffic	735	797	747	725	3 004
Total	5 521	6 332	6 061	5 963	23 876

	Percentage Distribution				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
Grain	19.7%	24.2	27.1	29.0	100.0
Other Farm Products	23.3	25.1	19.3	32.3	100.0
Metallic Ores	19.0	27.0	30.0	24.0	100.0
Coal	21.3	26.7	25.2	26.8	100.0
Crushed Stone, Gravel & Sand	20.0	28.2	28.3	23.5	100.0
Non-Metallic Minerals	22.2	25.1	27.5	25.2	100.0
Grain Mill Products	25.0	25.2	24.5	25.3	100.0
Food & Kindred Products	24.9	25.0	24.9	25.2	100.0
Primary Forest Products	24.6	25.7	24.9	24.8	100.0
Lumber & Wood Products	24.5	27.3	25.9	22.3	100.0
Pulp, Paper & Allied Products	24.1	26.1	25.0	24.8	100.0
Chemicals & Allied Products	25.5	26.2	24.1	24.2	100.0
Stone, Clay & Glass Products	22.7	27.0	26.3	24.0	100.0
Coke	26.2	27.5	24.5	21.8	100.0
Metals & Products (Exc. Coke)	24.3	28.5	24.6	22.6	100.0
MVs & Equipment	28.3	29.1	20.1	22.5	100.0
Waste & Scrap Mtrl.	24.7	26.8	25.0	23.5	100.0
All Other Traffic	24.5	26.5	24.9	24.1	100.0
Total	23.1	26.5	25.4	25.0	100.0

Source: Car Service Division, AAR.

Table IV-9

RAILROAD DEMAND IS CONCENTRATED AMONG BULK COMMODITIES

(Year 1981)

STCC No.	Commodity	Tons Originated (millions)	Percent of Total
11	Coal	528	36.3%
01	Farm Products	140	9.6
10	Metallic Ores	114	7.8
14	Nonmetallic Minerals	110	7.6
28	Chemicals & Allied Products	106	7.3
20	Food & Kindred Products	83	5.7
24	Lumber & Wood Products	80	5.5
33	Primary Metal Products	53	3.7
32	Stone, Clay & Glass Products	49	3.4
	Top Nine	1 263	86.9
	All Others	190	13.1
	Total	1 453	100.0

Source: ICC, Freight Commodity Statistics

Table IV-10

COAL IS THE DOMINANT COMMODITY HAULED BY RAILROADS

(Year 1981)

STCC No.	Commodity	% of Total Tons	% of Total Revenues	Rank Tons	Rank Revs.
11	Coal	36.3%	20.2%	1	1
01	Farm Products	9.6	8.9	2	4
10	Metallic Ores	7.8	2.4	3	12
14	Nonmetallic Minerals	7.6	3.5	4	10
28	Chemicals and Allied Products	7.3	11.1	5	2
20	Food and Kindred Products	5.7	9.9	6	3
24	Lumber and Wood Products	5.5	5.3	7	7
33	Primary Metal Products	3.7	5.3	8	8
32	Stone, Clay and Glass Products	3.4	3.8	9	9
26	Pulp, Paper and Allied Products	2.9	6.2	10	6
29	Petroleum and Coal Products	2.7	3.4	11	11
40	Waste and Scrap Material	2.3	1.9	12	13
37	Transportation Equipment	1.5	7.2	13	5
	Subtotal	96.3	89.1	--	--
	All Others	3.7	10.9		
		100.0	100.0		

Source: ICC, Freight Commodity Statistics.

Table IV-11

THE DEMAND FOR RAILROAD COAL MOVEMENT
HAS SHIFTED AMONG GEOGRAPHIC REGIONS

Year	Ton of Coal Originated (millions) United States	Eastern District	Southern District	Western District
1971	361	214	97	49
1972	375	216	103	56
1973	376	208	107	61
1974	391	210	110	71
1975	408	209	112	86
1976	397	187	112	98
1977	415	191	114	109
1978	383 1/	158	103	122
1979	474	201	118	155
1980	522	215	128	179
1981	528	210	133	185
		INDEX		
1971	100	100	100	100
1972	104	101	106	114
1973	104	97	110	124
1974	108	98	113	145
1975	113	98	115	176
1976	110	87	115	200
1977	115	89	118	222
1978	106	74	106	249
1979	131	94	122	316
1980	145	100	132	365
1981	146	98	137	378

1/ Decline in 1978 was due primarily to the United Mine Workers' strike.

Source: ICC, Freight Commodity Statistics.

Table IV-12

RAILROAD TRANSPORTATION OF COAL IS
CONCENTRATED AMONG SIX MAJOR RAILROAD SYSTEMS

(Year 1981)

Carrier	Tons Originated (millions)	Percent of Total
Burlington Northern	112	21.2%
Chessie System	90	17.0
Norfolk & Western	78	14.8
Family Lines	79	15.0
Conrail	36	6.8
Southern System	39	7.4
Top Six	434	82.2
All Others	94	17.8
Total	528	100.0

Source: ICC, Freight Commodity Statistics.

Table IV-13

THE AVERAGE PRICE OF COAL HAS INCREASED MORE THAN RAILROAD COAL RATES

Year	Average Price of Coal, F.O.B. Mine (per ton)	Average Rail Revenue Per Ton	Rail Rates As a Percentage of Destination Prices
1971	$7.07	$3.70	34.4%
1972	7.66	3.67	32.4
1973	8.53	3.78	30.7
1974	15.75	4.71	23.0
1975	19.23	5.25	21.4
1976	19.43	5.86	23.2
1977	19.82	6.48	24.6
1978	21.78	7.32	25.2
1979	23.50	8.15	25.8
1980	24.65	9.49	27.8
1981	26.00 p	11.33	30.4
----------	INDEX	----------	
1971	100	100	100
1972	108	99	94
1973	121	102	89
1974	223	127	67
1975	272	142	62
1976	275	158	67
1977	280	175	72
1978	308	198	73
1979	332	220	75
1980	349	256	81
1981	368	306	88

p: preliminary

Source: Column 1 - Department of Energy.
Column 2 - ICC, Freight Commodity Statistics.

Table IV-14

THE DEMAND FOR PIGGYBACK TRAFFIC HAS INCREASED DRAMATICALLY

Year	Cars Loaded in Revenue Piggyback Service	Index
1957	249 065	100
1960	554 115	222
1965	1 076 280	432
1970	1 449 519	582
1975	1 307 520	525
1978	1 840 588	739
1979	1 858 000	746
1980	1 661 000	667
1981	1 723 410	692

Source: Transportation Division, AAR.

Table IV-15

TRAILERS AND CONTAINERS LOADED IN PIGGYBACK SERVICE MOVE UNDER DIFFERENT PLANS

Year	Plan I	Plan II	Plan II-1/2	Plan III	Plan IV	Plan V	Sub-Total	Not Elsewhere Classified	Grand Total
1971	150 659	596 554	921 744	53 650	113 511	45 716	1 881 834	278 904	2 160 738
1972	160 741	507 402	1 182 322	82 295	144 155	58 727	2 135 652	231 326	2 366 978
1973	183 278	488 585	1 425 746	147 061	196 534	67 823	2 509 027	209 301	2 718 328
1974	157 187	423 775	1 462 199	196 159	184 160	76 194	2 499 674	222 780	2 722 454
1975	119 453	255 339	1 215 283	199 625	163 101	71 687	2 024 488	186 447	2 210 935
1976	188 077	229 224	1 323 165	300 088	207 970	70 700	2 319 224	186 449	2 505 673
1977	281 022	216 855	1 431 568	363 814	273 143	84 348	2 650 750	148 889	2 799 639
1978	318 747	230 334	1 544 133	423 680	337 963	103 253	2 958 110	162 795	3 120 905
1979	334 850	203 391	1 563 465	482 684	346 255	101 721	3 032 366	167 580	3 199 946
1980	325 793	170 375	1 305 224	549 300	306 595	103 868	2 761 155	175 891	2 937 046
1981	367 254	148 483	1 352 491	593 800	222 361	165 456	2 849 850	181 743	3 031 593
					INDEX				
1971	100	100	100	100	100	100	100	100	100
1972	107	85	128	153	127	126	113	83	110
1973	122	82	155	274	173	148	133	75	126
1974	104	71	159	366	162	167	133	80	126
1975	79	43	132	372	144	157	108	67	102
1976	125	38	144	559	183	155	123	67	116
1977	187	36	155	678	241	185	141	53	130
1978	211	39	168	790	298	226	157	58	144
1979	222	34	170	900	305	223	161	60	148
1980	216	29	142	1 024	270	227	147	63	136
1981	244	25	147	1 107	196	361	151	65	140

NOTE: See Table No I-11 for definition of plans.

Table IV-16

THE DECLINE IN RAIL PASSENGER TRAVEL HAS BEEN REVERSED

Year	Revenue Passengers Carried (millions) 1/	Revenue Passenger-Miles (millions) 1/
1970	284	10 740
1971	273	8 833
1972	261	8 558
1973	254	9 294
1974	274	10 333
1975	269	9 935
1976	272	10 304
1977	275	10 293
1978	281	10 221
1979	294	11 200
1980	300	10 995
----------	INDEX	----------
1970	100	100
1971	96	82
1972	92	80
1973	89	87
1974	96	96
1975	95	93
1976	96	96
1977	97	96
1978	99	95
1979	104	104
1980	106	102

1/ Includes AMTRAK beginning in 1972--Auto-Train for years 1972-1977.

NOTE: Data unavailable after 1980.

Table IV-17

RAILROADS ARE THE PREDOMINANT TRANSPORTERS OF BITUMINOUS AND LIGNITE COAL

Year	Total Domestic Production (million tons)	Transported by Rail 1/ Tons (millions)	Transported by Rail 1/ % of Total Production
1971	552	380	68.8%
1972	595	400	67.2
1973	592	400	67.6
1974	603	416	69.0
1975	648	430	66.4
1976	679	430	63.3
1977	691	437	63.2
1978	665	405	66.9
1979	776	500	64.4
1980	824	548	66.5
1981	818	554	67.7
----------INDEX----------			
1971	100	100	100
1972	108	105	98
1973	107	105	98
1974	109	109	100
1975	117	113	97
1976	123	113	92
1977	125	115	92
1978	120	106	99
1979	141	132	94
1980	149	144	97
1981	148	146	98

1/ Includes all line-haul railroads.

Source: Domestic Production, Department of Energy; Transported by Rail, ICC Reports.

Table IV-18

THE RAILROAD SHARE OF GRAIN TRAFFIC HAS DECLINED

Year	Billions of Bushels Moved		Percent of Total	
	Rail	Water	Rail	Water
1973	4.501	.988	82.0%	18.0%
1974	4.210	1.030	80.3	19.7
1975	4.065	1.196	77.3	22.7
1976	4.100	1.612	71.8	28.2
1977	3.911	1.524	72.0	29.0
1978	4.125	1.628	71.7	28.3
1979	4.410	1.622	73.1	26.9
1980	5.004	1.908	72.4	27.6
1981	4.379	1.986	68.8	31.2
----------INDEX----------				
1973	100	100	100	100
1974	94	104	98	109
1975	90	121	94	126
1976	91	163	88	157
1977	87	154	88	156
1978	92	165	87	157
1979	98	164	89	149
1980	111	193	88	153
1981	97	201	84	173

Source: Transportation Division, AAR, and U.S.D.A. Marketing Service Reports.

Table IV-19

THE RAILROAD SHARE OF MOTOR VEHICLE TRAFFIC INCREASED IN 1981

Year	New Motor Vehicles Shipped From U. S. Factories (thousands)		Percent of Total	
	Rail	Truck	Rail	Truck
1971	5 585	5 053	52.5%	47.5%
1972	5 888	5 382	52.2	47.8
1973	6 571	6 066	52.0	48.0
1974	5 552	4 506	55.2	44.8
1975	4 816	4 169	53 [illegible]	46.4
1976	5 910	5 566	51.5	48.5
1977	6 408	6 231	50.7	49.3
1978	6 706	6 165	52.1	47.9
1979	5 717	5 739	49.9	50.1
1980	4 292	3 775	53.2	46.8
1981	4 487	3 469	56.4	43.6
	INDEX			
1971	100	100	100	100
1972	105	107	99	101
1973	118	120	99	101
1974	99	89	105	94
1975	86	83	102	98
1976	106	110	98	102
1977	115	123	97	104
1978	120	122	99	101
1979	102	113	95	105
1980	77	75	101	99
1981	80	69	107	92

Source: Motor Vehicles Manufacturers Association of the United States.

Table IV - 20

THE DEMAND FOR SPECIFIC TYPES OF CARS
RELATES TO COMMODITY DEMAND

Commodity	Type of Car					
	Box	Covered Hopper	Flat	Gondola	Hopper	Tank
Coal				X	X	
Chemicals and Allied Products	X	X				X
Coke					X	
Crushed Stone and Gravel				X	X	
Food and Kindred Products	X					X
Freight Forwarding/ Shipper Traffic	X		X			
Grain and Grain Mill Products	X	X				
Lumber and Wood Products	X		X			
Metallic Ores					X	
Metals and Products	X		X	X		
Motor Vehicles and Equipment	X		X			
Nonmetallic Minerals		X			X	
Pulp, Paper and Allied Products	X					
Petroleum Products						X
Primary Forest Products				X	X	
Stone, Clay and Glass Products	X	X				
TOFC Traffic			X			
Waste and Scrap Materials	X			X		

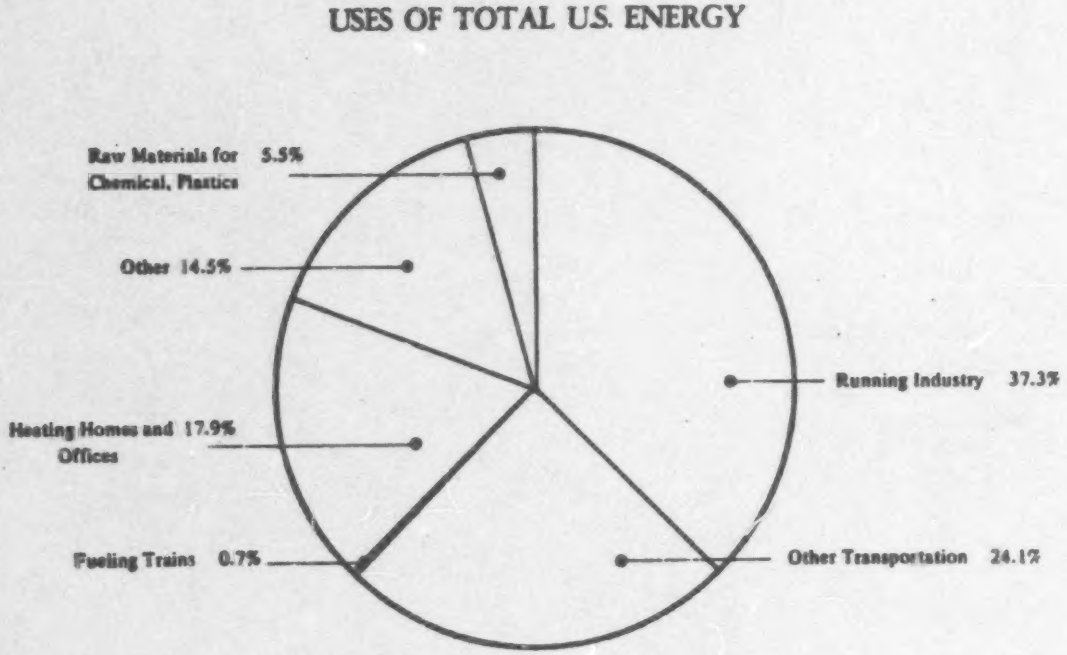
Source: Merrill Lynch, Railroad Equipment (Quarterly Industry Update, June 1980) and Transportation Division, AAR.

V. ENERGY

Table V-1

RAILROADS USE LESS THAN ONE PERCENT
OF TOTAL ENERGY CONSUMED

(Year 1978)



NOTE: Trucks use 1.8 percent of grand total and 7.5 percent of other transportation.

Source: Department of Energy, Energy Information Administration.

Table V-2

RAILROADS ARE ENERGY EFFICIENT

Service Type (Miles)	Average Tons Per Car	Percent Loaded Miles	Net Ton-Miles Per Gal.
Unit Train (500)	100	50%	350 1/
Carload Service (500)	45	60	198 1/
Long-Haul TOFC Service (1000)	30	75	173 2/
Short-Haul TOFC Service (400)	40	65	97 1/
Local Service (100)	45	55	40 2/
All Types Service (500)	53	57	207

1/ Peat, Marwick, Mitchell & Co.

2/ U.S. Department of Transportation.

Table V-3

RAILROAD FUEL EFFICIENCY HAS INCREASED

Year	Revenue Ton-Miles (millions)	Fuel Consumed in Frt. Serv. 1/ (million gallons)	Revenue Ton-Miles Per Gallon of Fuel Consumed	
			Ton Miles	Index
1971	739 743	3 659	202	100
1972	776 746	3 901	199	99
1973	851 809	4 051	210	104
1974	850 961	4 023	211	105
1975	754 252	3 657	206	102
1976	794 059	3 828	207	102
1977	826 292	3 921	211	104
1978	858 105	3 898	220	109
1979	913 669	4 013	228	113
1980	918 621	3 890	236	117
1981	911 705	3 708	246	122

1/ Includes a small amount of fuel used in switching passenger trains.

Table V-4

RAILROADS ARE GENERALLY MORE ENERGY EFFICIENT THAN TRUCKS AND BARGES

Service Types (Net Tons Per Vehicle)	Percent Loaded Miles 1/	Ton-Miles Per Gal.	Efficiency Rail to Truck 2/	Efficiency Rail to Barge 3/
500 Miles				
Unit Train Service (100 Tons)	50%	350	4.4 to 1	
Truck (25 Tons)	50	69		
Barge - Inland Waterway		277		1.5 to 1
500 Miles				
Carload Service (45 Tons)	60	198	2.2 to 1	
Truck (20 Tons)	80	77		
1000 Miles				
Long-Haul TOFC Service (30 Tons)	75	172	2.3 to 1	
Truck (15 Tons)	85	64		
400 Miles				
Short-Haul TOFC Service (40 Tons)	65	97	1.6 to 1	
Truck (15 Tons)	70	54		
100 Miles				
Local Service (45 Tons)	55	40	0.6 to 1	
Truck (20 Tons)	60	61		

1/ Typical for service types shown.

2/ Adjusted for rail circuity - 1.17% of truck.

3/ Adjusted for barge circuity - 1.60% of rail.

Source: Peat, Marwick, Mitchell & Co. and U. S. Department of Transportation.

Table V-5

DIESEL LOCOMOTIVES ARE SUBSTANTIALLY MORE EFFICIENT THAN COAL STEAM LOCOMOTIVES

		1944	1980
1.	Gross Ton-Miles (millions) [1/]	1 876 691	2 110 157
2.	Percent by coal-fired steam locomotives	74.80%	--
3.	Percent by diesel-powered locomotives	--	99.46%
4.	Gross Ton-miles (millions)		
	By coal-fired steam locomotives (1x2)	1 403 765	--
	By diesel-powered locomotives (1x3)	--	2 098 762
5.	Fuel required:		
	Coal (tons)	83 524 020	--
	Diesel oil (thousand gal.)	--	3 943 574
6.	BTU's per: [2/]		
	Ton of coal	29 000 000	--

NOTE: Above data based on freight service operations.

1/ Includes locomotives.

2/ Calculated at 14,500 BTU's per pound of coal 19,550 BTU's per pound of liquid fuel (7.24 pounds per gallon) - Petroleum Facts and Figures, American Petroleum Institute.

Table V-6

RAILROADS ARE HIGHLY DEPENDENT ON DIESEL FUEL

Year	Gallons Consumed (millions)	Index
1971	3 823	100
1972	3 997	105
1973	4 161	109
1974	4 175	98
1975	3 736	102
1976	3 896	104
1977	3 985	104
1978	3 968	107
1979	4 072	103
1980	3 944	103
1981	3 761	98

Table V-7

RAILROAD USE OF COAL HAS VIRTUALLY DISAPPEARED

Year	Domestic Production (1000 Net Tons)	Coal Used by Class I Railroads (1000 Net Tons)	Percentage Used by Railroads
1920	568 667	139 275	24.49%
1925	520 053	119 889	23.05
1930	467 527	99 539	21.29
1935	372 373	71 843	19.29
1940	460 772	79 914	17.34
1945	577 617	115 293	19.96
1950	516 311	55 452	10.74
1955	464 633	11 427	2.46
1960	415 512	39	0.01
1965	512 088	4	-
1970	602 932	1	-
1975	648 438	1	-
1980	823 644	1	-
1981	810 000	1	-
----------	INDEX	----------	
1920	100	100	100
1925	91	86	94
1930	82	71	87
1935	65	52	79
1940	81	57	71
1945	102	83	82
1950	91	40	44
1955	82	8	10
1960	73	-	-
1965	90	-	-
1970	106	-	-
1975	114	-	-
1980	145	-	-
1981	142	-	-

NOTE: Column 1 from National Coal Association and Department of Energy.

VI. FINANCIAL PERFORMANCE

Table VI-1

RAILROAD REVENUES HAVE INCREASED SIGNIFICANTLY

Year	Operating Revenues (millions of $s) United States	Eastern District	Southern District	Western District
1971	$12 689	$4 650	$2 157	$5 881
1972	13 410	4 783	2 301	6 325
1973	14 770	5 186	2 513	7 071
1974	16 923	5 982	2 880	8 060
1975	16 402	5 805	2 731	7 866
1976	18 536	6 408	3 149	8 979
1977	20 090	6 656	3 516	9 918
1978	21 721	6 852	3 769	11 100
1979	25 219	8 170	4 356	12 693
1980	28 103	8 506	4 928	14 669
1981	30 734	9 262	5 452	16 019
----------	----------	INDEX	----------	----------
1971	100	100	100	100
1972	106	103	107	108
1973	116	112	117	120
1974	133	129	134	137
1975	129	125	127	134
1976	146	138	146	153
1977	158	143	163	169
1978	171	147	175	189
1979	199	176	202	216
1980	221	183	228	249
1981	242	199	253	272

Table VI-2

THE RAILROAD REVENUE MARGIN INCREASED IN 1981

Year	Rev. Per Ton-Mile	Cost Per Ton-Mile	Revenue Margin
1971	1.593 ¢	1.519 ¢	0.074 ¢
1972	1.618	1.542	0.076
1973	1.617	1.557	0.060
1974	1.853	1.774	0.079
1975	2.041	2.015	0.026
1976	2.191	2.153	0.038
1977	2.286	2.270	0.016
1978	2.358	2.360	(0.002)
1979	2.599	2.530	0.069
1980	2.868	2.979	(0.111)
1981	3.155	3.002	0.153

Table VI-3

RAILROAD OPERATING INCOME HAS FLUCTUATED

Year	Net Railway Operating Income (millions of $s)			
	United States	Eastern District	Southern District	Western District
1971	$595	$(56)	$209	$442
1972	654	12	224	418
1973	650	7	228	415
1974	768	47	245	476
1975	351	(225)	217	359
1976	452	(306)	258	500
1977	343	(496)	302	537
1978	427	(503)	302	628
1979	837	(170)	329	678
1980	1 312	7	391	915
1981	1 336	251	348	738
	INDEX			
1971	100	--	100	100
1972	110	--	107	95
1973	109	--	109	94
1974	129	--	117	108
1975	59	--	104	81
1976	76	--	123	113
1977	58	--	144	121
1978	72	--	144	142
1979	141	--	157	153
1980	221	--	187	207
1981	225	--	167	167

Table VI-4

RAILROAD REAL (CONSTANT DOLLAR) OPERATING INCOME DECLINED IN 1981

($ amounts in millions)

Year	NROI 1/ in Current Dollars	Implicit Price Deflator For GNP	"Real" NROI
1971	$595	100	$595
1972	654	104	629
1973	650	110	591
1974	768	120	640
1975	351	131	268
1976	452	138	328
1977	343	146	235
1978	427	156	274
1979	837	170	492
1980	1 312	185	709
1981	1 336	202	661

1/ Net Railway Operating Income.

Source: Column 2, Bureau of Economic Analysis.

Table VI-5

RAILROAD RETURN ON NET INVESTMENT HAS BEEN INADEQUATE

Year	United States	Eastern District	Southern District	Western District
1971	2.12%	Def.	4.36%	3.51%
1972	2.34	0.11%	4.61	3.34
1973	2.33	0.07	4.61	3.30
1974	2.70	0.46	4.73	3.66
1975	1.20	Def.	3.98	2.65
1976	1.60	Def.	4.63	3.57
1977	1.24	Def.	5.23	3.71
1978	1.52	Def.	5.17	4.22
1979	2.87	Def.	5.38	4.38
1980	4.13	0.08	6.02	5.46
1981	2.98	2.65	5.24	4.18

NOTE: Rates of return shown above do not include the elimination of the effects of investment tax credits. With this adjustment, the rate of return in each of the past four years would be even lower.

Table VI-6

RAILROAD RETURN ON SHAREHOLDERS' EQUITY HAS BEEN INADEQUATE

Year	Income Before Extraordinary Items (millions)	Shareholders' Equity (End of Year) (millions)	Rate of Return on Equity
1971	$ 247	$ 16 568	1.49%
1972	319	16 110	1.98
1973	359	16 339	2.20
1974	730	14 945	4.89
1975	144	14 942	0.97
1976	355	15 230	2.33
1977	326	15 727	2.07
1978	307	16 175	1.90
1979	938	17 796	5.27
1980	1 192	19 860	6.00
1981	2 141	21 725	9.85

Table VI-7

RAILROAD RETURN ON SHAREHOLDERS' EQUITY
HAS BEEN LOWER THAN OTHER INDUSTRIES

	Rate of Return on Shareholders' Equity				
Year	Manufacturing Corporations	Total Leading Corporations	Public Utilities	Total Transportation	Class I Railroads 1/
1975	12.3%	11.1%	10.8%	2.3%	0.8%
1976	15.0	13.3	11.8	6.7	1.8
1977	15.0	14.0	12.1	7.0	1.9
1978	15.9	14.9	12.1	8.2	1.3
1979	18.4	16.3	12.3	7.8	5.5
1980	16.6	15.2	12.8	5.4	6.3
1981	15.7	14.6	13.8	7.2	10.2

1/ Will not agree precisely with return on equity for each respective year for railroads shown in Table VI-8 which reflects late revisions in base data.

Source: Citibank, Monthly Economic Letter, April of each year.

Table VI-8

THE RAILROADS DEBT/CAPTIAL RATIO HAS DECLINED IN THE PAST TWO YEARS

Dec. 31	Long-Term Debt 1/ (million $s)	Total Capital (millions $s)	Debt/Capital Ratio
1971	$11 556	$28 123	41.1
1972	11 547	27 657	41.8
1973	11 524	27 862	41.4
1974	11 597	26 542	43.7
1975	12 081	27 023	44.7
1976	11 007	26 237	42.0
1977	11 966	27 693	43.2
1978	12 256	28 430	42.1
1979	12 639	30 435	41.5
1980	13 568	33 428	40.6
1981	13 379	35 104	38.1
----------INDEX----------			
1971	100	100	100
1972	100	98	102
1973	100	99	101
1974	100	94	106
1975	105	96	109
1976	95	93	102
1977	104	98	105
1978	106	101	102
1979	109	108	101
1980	117	119	99
1981	116	125	93

1/ Includes debt due in one year.

Table VI-9

RAILROAD EQUIPMENT DEBT HAS INCREASED

Year	Equipment Obligations Outstanding at End of Year (million $s)	Index
1970	$ 4 444	100
1971	4 545	102
1972	4 587	103
1973	4 596	103
1974	4 725	106
1975	5 179	117
1976	5 363	121
1977	5 674	128
1978	5 732	129
1979	6 116	138
1980	6 694	151

Table VI-10

RAILROAD COVERAGE OF FIXED CHARGES HAS IMPROVED

Year	Income Available For Fixed Charges Before F I. T. (million $s)	Fixed and Contingent Charges (million $s)	Coverage Ratio Before F. I. T.
1971	$1 020	$566	1.80
1972	1 174	568	2.07
1973	1 283	594	2.16
1974	1 794	637	2.82
1975	985	668	1.47
1976	1 263	656	1.93
1977	1 265	701	1.80
1978	1 438	802	1.79
1979	2 218	861	2.58
1980	2 930	1 034	2.83
1981	4 180	1 133	3.69
	INDEX		
1971	100	100	100
1972	115	100	115
1973	126	105	120
1974	176	113	157
1975	97	118	82
1976	124	116	107
1977	124	124	100
1978	141	142	99
1979	217	152	143
1980	287	183	157
1981	410	200	205

Table VI-11

RAILROAD WORKING CAPITAL IMPROVED IN 1981

Dec. 31	Current Assets	Current Liabilities	Net Working Capital	Net Working Capital As Percent of Current Liabilities
	(millions)			
1971	$3 586	$3 648	Def.$62	--
1972	3 612	3 672	Def. 61	--
1973	4 056	3 898	158	9.2%
1974	4 553	4 334	220	5.1
1975	4 641	4 573	68	1.5
1976	5 293	4 950	343	6.9
1977	5 986	5 415	571	10.5
1978	6 874	6 271	603	9.6
1979	7 780	7 225	555	7.7
1980	8 676	7 779	897	11.5
1981	9 680	7 997	1 683	21.0

Table VI-12

COVERAGE OF RAILROAD NET WORKING CAPITAL IMPROVED IN 1981

Year	Net Working Capital (million $s)	Operating Costs Per Day[1/] (million $s)	Days of Coverage
1971	Def. $ 62	$ 31	(2)
1972	Def. 61	32	(2)
1973	158	36	4
1974	220	41	5
1975	68	49	1
1976	343	55	6
1977	571	60	10
1978	603	61	10
1979	555	63	9
1980	897	69	13
1981	1 683	75	22

1/ Operating costs include operating expenses (less depreciation and retirement charges), current taxes and rents.

NOTE: The increase in net working capital in recent years is due, in part, to a buildup in material and supplies inventories.

Table VI-13

THE RAILROAD CURRENT RATIO HAS BEEN INADEQUATE

Dec. 31	Current Assets	Current Liabilities 1/	Current Ratio
	(million$s)	(million $s)	
1971	$ 3 586	$3 648	0.98
1972	3 612	3 672	0.98
1973	4 056	3 898	1.04
1974	4 553	4 334	1.05
1975	4 641	4 573	1.01
1976	5 293	4 950	1.07
1977	5 986	5 415	1.11
1978	6 874	6 271	1.10
1979	7 780	7 225	1.08
1980	8 676	7 779	1.12
1981	9 680	7 997	1.21

1/ Includes long-term debt due within one year.

NOTE: The Interstate Commerce Commission recognizes 1.8 to be a reasonable ratio.

Table VI-14

RAILROAD INVESTMENT TURNOVER HAS IMPROVED

Year	Operating Revenues (million $s)	Net Property Investment (million $s)	Capital Turnover Rate
1971	$12 689	$28 096	.45
1972	13 410	27 736	.48
1973	14 770	27 979	.53
1974	16 923	28 855	.59
1975	16 402	29 740	.55
1976	18 536	26 926	.69
1977	20 090	28 222	.71
1978	21 721	28 794	.75
1979	25 219	30 271	.83
1980	28 103	33 217	.85
1981	30 734	34 997	.88

Table VI-15

RAILROAD DIVIDEND PAYOUT RATIOS HAVE DECLINED[1/]

Year	Income Before Extraordinary Items (million $s)	Cash Dividends (million $s)	Payout Ratio
1971	$ 761	$387	50.8
1972	865	410	47.3
1973	922	421	45.7
1974	1 131	510	45.1
1975	768	423	55.1
1976	1 042	437	41.9
1977	1 155	477	41.4
1978	1 192	503	42.2
1979	1 600	563	35.2
1980	1 806	610	33.6
1981	2 218	714	32.2
----------INDEX----------			
1971	100	100	100
1972	114	106	93
1973	121	109	90
1974	149	132	89
1975	101	109	108
1976	137	113	82
1977	152	123	81
1978	157	130	83
1979	210	145	69
1980	237	158	67
1981	291	184	63

[1/]Includes only those railroads reporting a profit in each respective year.

Table VI-16

THE RAILROAD CASH-FLOW RATIO IMPROVED IN 1981

($ amounts in millions)

Year	Net Ordinary Income	Depreciation	Total	Capital Expenditures	Cash Flow Ratio
1971	$247	$803	$1 050	$1 178	89.1
1972	319	805	1 124	1 216	92.4
1973	359	806	1 165	1 342	86.8
1974	730	819	1 549	1 565	98.9
1975	144	854	998	1 790	55.8
1976	355	837	1 192	1 725	69.1
1977	326	877	1 203	2 290	52.5
1978	307	975	1 282	2 738	46.8
1979	938	1 020	1 958	3 325	58.9
1980	1 191	1 149	2 340	3 621	64.6
1981	2 105	1 212	3 317	2 855	116.2
			INDEX		
1971	100	100	100	100	100
1972	129	100	107	103	104
1973	145	100	111	114	97
1974	296	102	148	133	111
1975	58	106	95	152	63
1976	144	104	114	146	78
1977	132	109	115	194	59
1978	124	121	122	232	53
1979	380	127	186	282	66
1980	482	143	223	307	73
1981	852	151	316	242	130

Table VI-17

Railroad Bond Ratings Vary

Class I Railroads	1975	1976	1977	1978	1979	1980	1981	Oct. 1982
Atchison, Topeka & Santa Fe	AA	AA	AA	AA	AA	AA	AA	AA
Baltimore & Ohio RR	BB	BB	BB	BB	BBB	BBB	BBB	BBB
Boston & Maine Corp.	DD	DD	D 1/	D	D	D	D	D
Burlington Northern	A	A	A	A	A	A	A	A
Chesapeake & Ohio Ry.	A	A	A	A	A	A	A	A
Chicago & North Western Ry.	B	B	B	B	B	B	B	B
Chicago, Milwaukee, St. Paul & Pacific	B	B	B	D	D	D	D	D
Chicago, Rock Island & Pacific	DDD	DDD	D 1/	D	D	D	D	D
Denver & Rio Grande Western	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Florida East Coast Ry.	BB	BB	BB	BB	BB	BB	BB	BB
Fort Worth & Denver Ry.	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Illinois Central Gulf	A	A	BBB	BBB	BBB	BB	BB	BB
Kansas City Southern	A	A	A	A	A	A	A	A
Louisville & Nashville RR	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB
Missouri-Kansas-Texas	B	B	B	B	B	B	B	B
Missouri Pacific	BBB	BBB	BBB	A-	A-	A-	A-	A-
Norfolk & Western	AA	AA	AA	AA	AA	AA	AA	AA
St. Louis-San Francisco	BBB	BBB	BBB	BBB	BBB	BBB	A 3/	A 3/
St. Louis Southwestern	AA	AA	AA	AA	AA	AA	AA	AA
Seaboard Coast Line	A	A	A	A	A	A	A	A
Soo Line 2/	BBB	BBB	BBB	BBB	BBB	A	AA	AA
Southern Pacific	A	A	A	A	A	A	A	BBB
Southern Railway	A+	A+	A+	A+	A+	AA	AA	AA
Union Pacific RR	AA	AA	AA	AA	AA	AA	AA	AA
Western Pacific RR	BB	BB	BB	BB	BB	BB	BB	BB

1/ Consolidation of bankrupt issues into one category.

2/ Wisconsin Central first mortgage.

3/ Merged into Burlington Northern.

Source: Standard & Poor's Bond Guide, year end issues, May 1981 issue and October 1982 issue.

Table VI-18

TEN CLASS I RAILROADS HAVE FILED FOR BANKRUPTCY

SINCE 1970

Railroad	Date Entered
Boston and Maine	3 - 23 - 70
Central Railroad of N.J.*	4 - 27 - 67
Lehigh Valley*	7 - 24 - 70
New York, New Haven & Hartford*	7 - 7 - 61 (Merged with PC)
Penn Central*	6 - 21 - 70
Reading*	11 - 23 - 71
Erie-Lackawanna*	6 - 26 - 72
Ann Arbor*	10 - 15 - 73
Chicago, Rock Island & Pacific	3 - 17 - 75
Chicago, Milw., St. Paul & Pac.	12 - 19 - 77

*Part of Conrail.

Table VI-19

RAILROAD PRICE-EARNINGS RATIOS HAVE GENERALLY INCREASED

Common Stock		1975	1976	1977	1978	1979	1980	1981
Burlington Northern Inc.[1/] (NYSE-BNI)	Avg. Dividend Yield(%)	2.5%	3.1%	3.5%	4.3%	3.9%	2.7%	2.7%
	Earnings/Share($)	$2.06	$2.85	$2.87	$4.26	$6.56	$7.55	$7.02
	Avg. P/E Ratio	8.4	7.3	7.9	4.6	3.9	5.6	8.0
Chessie System Inc.[2/] (NYSE-CO)	Avg. Dividend Yield(%)	6.4%	5.8%	6.3%	7.6%	8.0%	N/A	N/A
	Earnings/Share($)	$4.59	$5.38	$4.01	$3.59	$6.05	N/A	N/A
	Avg. P/E Ratio	7.2	6.9	9.2	8.5	4.8	N/A	N/A
Chicago & Northwestern Transport. Co. [3/] (OTC-CNWEA)	Avg. Dividend Yield(%)	0	0	0	0	0	0	0
	Earnings/Share($)	$(1.87)	$1.86	$3.26	$3.55	$0.50	$2.93	$3.23
	Avg. P/E Ratio	-	2.5	2.0	5.0	31.0	3.7	7.8
Florida East Coast Railway Co. [15/] (NYSE-FLA)	Avg. Dividend Yield(%)	0	0	0	0	0	0	0
	Earnings/Share($)	$2.05	$1.21	$2.82	$5.66	$15.22	$2.07	$1.27
	Avg. P/E Ratio	9.6	17.7	12.3	8.2	3.4	7.4 e	7.3 e
IC Industries, Inc.[4/] (NYSE-ICX)	Avg. Dividend Yield(%)	9.0%	7.0%	6.1%	6.4%	6.9%	6.0% e	6.3% e
	Earnings/Share($)	$2.65	$3.58	$4.55	$5.23	$5.24	$6.02	$6.65
	Avg. P/E Ratio	5.4	5.4	5.4	4.9	5.0	5.5 e	5.1 e
Kansas City Southern Industries, Inc. [5/] (NYSE-KSU)	Avg. Dividend Yield(%)	7.7%	4.9%	4.4%	4.3%	3.9%	2.65 e	2.97 e
	Earnings/Share($)	$1.02	$1.37	$2.47	$3.93	$5.12	$6.35	$3.95
	Avg. P/E Ratio	5.1	6.0	4.6	4.6	5.1	6.2 e	6.6 e
Missouri Pacific Corporation [6/] (NYSE-MIS)	Avg. Dividend Yield(%)	6.2%	4.4%	4.3%	5.1%	5.8%	4.8%	4.4%
	Earnings/Share($)	$4.79	$6.17	$8.01	$8.83	$11.48	$10.56	$12.35
	Avg. P/E Ratio	4.1	5.5	5.6	5.7	4.4	6.5	6.7
Norfolk & Western Railroad Co. [7/] (NYSE-NFK)	Avg. Dividend Yield(%)	7.6%	6.2%	6.0%	7.2%	7.6%	6.2%	5.6%
	Earnings/Share($)	$2.80	$4.21	$3.31	$3.39	$6.36	$7.36	$8.94
	Avg. P/E Ratio	7.8	6.6	9.0	7.5	3.9	4.8	5.2
Rio Grande Industries[8/] (NYSE-RGI)	Avg. Dividend Yield(%)	4.1%	3.3%	3.0%	3.3%	3.1%	2.2%	2.4%
	Earnings/Share($)	$2.39	$2.90	$3.69	$5.30	$7.41	$7.13	$7.53
	Avg. P/E Ratio	6.1	6.9	6.8	4.8	4.3	6.4	5.9
St. Louis-San Francisco [16/] Railway Co. (NYSE-FN)	Avg. Dividend Yield(%)	10.3%	7.1%	5.8%	6.3%	5.3%	N/A	N/A
	Earnings/Share($)	$1.97	$4.61	$6.38	$7.84	$7.47	N/A	N/A
	Avg. P/E Ratio	12.4	7.7	6.7	5.0	6.3	N/A	N/A
Santa Fe Industries, Inc. [9/] (NYSE-SFF)	Avg. Dividend Yield(%)	6.6%	5.2%	5.5%	6.4%	5.8%	4.0%	3.8%
	Earnings/Share($)	$4.23	$4.61	$5.92	$5.96	$8.08	3.47	$2.73
	Avg. P/E Ratio	6.5	7.9	6.4	5.8	5.3	6.4	9.6
Seaboard Coast Line Industries [10/] (NYSE-SCI)	Avg. Dividend Yield(%)	6.8%	5.9%	6.0%	7.2%	8.0%	N/A	N/A
	Earnings/Share($)	$3.23	$5.84	$7.02	$4.64	$9.06	N/A	N/A
	Avg. P/E Ratio	7.3	4.8	4.9	6.6	3.1	N/A	N/A
Soo Line Railroad Co. (NYSE-SOO)	Avg. Dividend Yield(%)	7.6%	9.1%	8.8%	9.5%	9.6%	8.9 e	11.0 e
	Earnings/Share($)	$1.37	$2.13	$2.48	$3.07	$3.63	$4.48	$4.79
	Avg. P/E Ratio	7.5	5.2	5.9	5.2	5.1	5.2 e	4.4 e
Southern Pacific Co.[11/] (NYSE-SX)	Avg. Dividend Yield(%)	7.9%	6.5%	6.8%	7.7%	7.8%	6.8%	5.9%
	Earnings/Share($)	$2.81	$4.10	$4.39	$4.31	$6.67	$5.78	$6.18
	Avg. P/E Ratio	10.1	8.5	7.9	7.2	4.7	6.7	7.1
Southern Railway Co.[12/] (NYSE-SR)	Avg. Dividend Yield(%)	4.3%	3.9%	4.5%	5.5%	6.1%	5.4%	4.9%
	Earnings/Share($)	$5.12	$5.85	$7.04	$8.35	$10.39	$11.57	$13.55
	Avg. P/E Ratio	9.6	10.1	7.9	5.9	5.1	5.9	6.3
Union Pacific Corp.[13/] (NYSE-UNP)	Avg. Dividend Yield(%)	3.9%	3.4%	3.5%	4.2%	3.7%	2.8%	2.8%
	Earnings/Share($)	$1.61	$2.01	$2.34	$2.78	$4.01	$ 4.22	$ 4.27
	Avg. P/E Ratio	11.1	10.9	11.0	8.8	8.3	12.31	13.9
CSX Corporation [14/]	Avg. Dividend Yield(%)	-	-	-	-	-	7.0%	5.2%
	Earnings/Share($)	-	-	-	-	-	$ 7.13	$ 8.92
	Avg. P/E Ratio	-	-	-	-	-	5.0	5.8

Class I Railroad Subsidiaries:

1/ Burlington Northern, Colorado and Southern and Fort Worth and Denver.
2/ Baltimore and Ohio, Chesapeake and Ohio, and Western Maryland.
3/ Chicago and Northwestern Railway Co.
4/ Illinois Central Gulf Railroad.
5/ Kansas City Southern Railway. 1981 reflects two-for-one stock split.
6/ Missouri Pacific.
7/ Delaware and Hudson Railroad.
8/ Denver and Rio Grande Western Railroad
9/ Atchison, Topeka and Santa Fe Railway Co.
10/ Seaboard Coast Line RR, Louisville and Nashville RR, and Clinchfield RR.
11/ Southern Pacific Transportation Company
12/ Alabama Great Southern, Central of Georgia, and Cincinnati, New Orleans and Texas Pacific.
13/ Union Pacific Railroad.
14/ Chessie System and Family Lines.
15/ Adjusted for 4-for-1 stock split 7/81.
16/ Merged into Burlington Northern on Nov. 1, 1980.
e estimated by AAR.

Source: Value Line.

VII. RESOURCE AVAILABILITY AND UTILIZATION

Table VII-1

THE HORSEPOWER OF THE DIESEL FLEET HAS INCREASED

Year	Units in Service 1/	Average HP Per Unit	Aggregate Horsepower (millions)
1971	26 897	1 976	53.1
1972	27 064	2 012	54.5
1973	27 540	2 058	56.7
1974	27 857	2 094	58.3
1975	27 985	2 121	59.4
1976	27 383	2 071	56.7
1977	27 450	2 167	59.5
1978	27 184	2 140	58.2
1979	27 922	2 188	61.1
1980	28 243	2 302	65.0
1981	27 981	2 327	65.1
----------INDEX----------			
1971	100	100	100
1972	101	102	103
1973	102	104	107
1974	104	106	110
1975	104	107	112
1976	102	105	107
1977	102	110	112
1978	101	108	110
1979	104	111	115
1980	105	116	122
1981	104	118	123

1/ Includes AMTRAK beginning with 1972--Auto-Train for years 1972-1977.

NOTE: 1981 data from Transportation Division, AAR, and AMTRAK.

Table VII-2

TRAINLOAD TONNAGE HAS INCREASED

Year	Average Freight Trainload-Tons			
	United States	Eastern District	Southern District	Western District
1971	1 751	1 797	1 829	1 697
1972	1 774	1 823	1 867	1 716
1973	1 844	1 892	1 955	1 784
1974	1 875	1 992	1 954	1 790
1975	1 838	2 011	1 994	1 883
1976	1 954	2 013	1 963	1 922
1977	2 029	2 097	2 033	1 998
1978	2 029	2 068	2 009	2 020
1979	2 096	2 169	1 940	2 121
1980	2 174	2 223	2 012	2 212
1981	2 263	2 306	2 106	2 309
	INDEX			
1971	100	100	100	100
1972	101	101	102	101
1973	105	105	107	105
1974	107	111	107	105
1975	105	112	109	111
1976	112	112	107	113
1977	116	117	111	118
1978	116	115	110	119
1979	120	121	106	125
1980	124	124	110	130
1981	129	128	115	136

Table VII-3

THE NUMBER OF CARS COMPRISING A FREIGHT TRAIN HAS REMAINED GENERALLY STATIC

Year	Average Number of Cars Per Freight Train			
	United States	Eastern District	Southern District	Western District
1971	68	68	69	68
1972	67	68	69	66
1973	67	66	69	66
1974	66	68	67	64
1975	69	70	69	68
1976	67	69	66	67
1977	67	70	65	67
1978	67	69	64	67
1979	67	70	62	68
1980	68	71	64	69
1981	69	71	65	69
----------	INDEX			
1971	100	100	100	100
1972	99	100	100	97
1973	99	97	100	97
1974	97	100	97	94
1975	101	103	100	100
1976	99	101	96	99
1977	99	103	94	99
1978	99	101	93	99
1979	99	103	90	100
1980	100	104	93	101
1981	101	104	94	101

Table VII-4

THE CAPACITY OF THE FREIGHT CAR FLEET HAS INCREASED

Year	No. of Freight Cars 1/ (millions)	Average Capacity Per Car (Tons)	Total Capacity of Freight Cars (million of tons)
1971	1.76	68.4	120
1972	1.72	69.6	120
1973	1.71	70.5	121
1974	1.72	71.6	123
1975	1.72	72.9	125
1976	1.70	73.8	125
1977	1.67	75.5	126
1978	1.65	76.9	129
1979	1.70	77.7	132
1980	1.71	79.4	136
1981	1.67	80.4	134
----------	----------	INDEX ----------	----------
1971	100	100	100
1972	98	102	100
1973	97	103	101
1974	98	105	103
1975	98	107	104
1976	97	108	104
1977	95	110	105
1978	94	112	108
1979	97	114	110
1980	97	116	113
1981	95	118	112

Source: Column 1, American Railway Car Institute and Transportation Division, AAR.

1/ Includes cars of all railroads, car companies and shippers.

Table VII-5

CARLOAD TONNAGE HAS INCREASED

Year	Average Freight Carload -- Tons			
	United States	Eastern District	Southern District	Western District
1971	55.2	53.4	58.9	54.7
1972	56.3	54.6	59.3	56.0
1973	56.7	54.6	59.5	57.0
1974	58.4	56.2	61.2	58.6
1975	60.8	58.2	63.4	61.6
1976	61.0	57.8	63.7	62.0
1977	61.1	57.2	64.6	62.0
1978	61.8	56.9	64.6	63.5
1979	64.1	60.0	66.4	65.8
1980	67.1	63.2	68.9	67.3
1981	68.1	63.8	70.0	69.8
----------	INDEX			
1971	100	100	100	100
1972	102	102	101	102
1973	103	102	101	104
1974	106	105	104	107
1975	110	109	108	113
1976	111	108	108	113
1977	111	107	110	113
1978	112	107	110	116
1979	116	112	113	120
1980	122	118	117	123
1981	123	119	119	128

Source: ICC, Freight Commodity Statistics.

Table VII-6

THE AVERAGE LENGTH OF RAILROAD HAUL HAS INCREASED

Year	Rev./Ton-Miles (billions)	Rev. Tons Carried (millions)	Length of Haul (miles)
1971	740	2 458	301
1972	777	2 543	306
1973	852	2 701	315
1974	851	2 732	311
1975	754	2 437	309
1976	794	2 452	324
1977	826	2 439	339
1978	858	2 312	371
1979	914	2 424	377
1980	919	2 434	378
1981	912	2 377	384
----------	INDEX	----------	
1971	100	100	100
1972	105	103	102
1973	115	110	105
1974	115	111	103
1975	102	99	103
1976	107	100	108
1977	112	99	113
1978	116	94	123
1979	124	99	125
1980	124	99	126
1981	123	97	128

Table VII-7

RAILROAD UTILIZATION OF CAPACITY HAS INCREASED

Year	Average Route Miles Operated in Freight Service (millions)	Freight Revenue Ton-Miles Per: Active Locomotive (millions)	Serviceable Freight Car (thousands)	Freight Car-Mile	Freight Train-Mile (thousands)	Per Car Loaded
1971	3.6	41.9	494	25.3	1.7	29 279
1972	3.7	42.0	527	25.6	1.7	29 755
1973	4.1	44.6	575	27.2	1.8	31 158
1974	4.1	43.5	581	27.7	1.8	32 500
1975	3.7	40.4	533	27.3	1.9	32 487
1976	4.1	42.3	577	27.8	1.9	33 852
1977	4.2	43.3	609	28.7	1.9	35 654
1978	4.5	44.6	640	29.5	2.0	36 714
1979	4.9	46.2	671	30.7	2.0	38 267
1980	5.1	49.1	681	31.4	2.1	40 628
1981	5.0	n/a	n/a	32.6	2.2	42 191
----------	----------	INDEX	----------	----------	----------	----------
1971	100	100	100	100	100	100
1972	103	100	107	101	100	100
1973	114	106	116	108	106	106
1974	114	104	118	109	106	111
1975	103	96	108	108	112	111
1976	114	101	117	110	112	116
1977	117	103	123	113	112	122
1978	125	106	130	117	118	125
1979	136	110	136	121	118	131
1980	142	117	138	124	124	139
1981	139	n/a	n/a	129	129	144

Table VII-8

RAILROAD EMPLOYMENT HAS BEEN IN A LONG-TERM DECLINE

	Number of Employees 1/	Index (1920=100)
1920 (peak year)	2 022 852	100
1929	1 660 850	82
1939	987 943	49
1949	1 191 444	59
1959	815 474	40
1969	578 277	29
1970	566 282	28
1971	544 333	27
1972	526 061	26
1973	520 153	26
1974	525 177	26
1975	487 789	24
1976	482 882	24
1977	482 731	24
1978	471 519	23
1979	482 789	24
1980	458 994	23
1981	436 397	22

1/ Class I Railroads excluding Amtrak and Auto Train.

Source: ICC, Wage Statistics.

Table VII-9

RAILROAD OUTPUT PER EMPLOYEE HAS INCREASED

Year	Freight Revenue Ton-Miles Per Employee (millions)	Freight Revenue Ton-Miles Per Employee Hour Paid For
1971	1.5	605
1972	1.5	637
1973	1.7	696
1974	1.7	695
1975	1.6	676
1976	1.7	712
1977	1.8	738
1978	1.9	775
1979	1.9	802
1980	2.1	855
1981	2.2	1 105
----------INDEX----------		
1971	100	100
1972	100	105
1973	113	115
1974	113	115
1975	107	112
1976	113	118
1977	120	122
1978	127	128
1979	127	133
1980	140	141
1981	147	183

NOTE: Freight service employment estimated on basis of ratio of freight operating expenses to total operating expenses.

Source: ICC, Annual Reports (R-1) and Wage Statistics.

Table VII-10

RAILROAD EMPLOYEES BELONG TO A MULTITUDE OF UNIONS

Employee Classification	BRAC	BMWE	IBEW	IBBB	BRC	IAM	SMW	IBF&O	BRS	HRE	RYA	ATDA	UTU	BLE
Clerks, Station & Tel. Employees	X													
Maintenance of Way Employees		X												
Linemen & Groundmen			X											
Blacksmiths & Boilermakers				X										
Carmen					X									
Electrical Workers			X											
Machinists						X								
Sheet Metal Workers							X							
Skilled Trades Helpers, Helper Apprentices & Regular Apprentices (ME & Stores)			X	X	X	X	X							
Coach Cleaners					X									
Stationery Engine & Boiler Room Employees, Shop & Roundhouse Laborers, Etc.								X						
Signalmen, Assistants & Helpers, Signal Maintainers, Assistants & Helpers & Gang Foremen									X					
Dining Car Employees										X				
Yardmasters & Assistants											X			
Train Dispatchers & Asst. Chief Dispatchers												X		
Road Passenger Conductors & Assts., Baggagemen, Brakemen & Firemen & Helpers													X	
Road Passenger Engineers & Motormen														X
Road Freight Conductors & Brakemen													X	
Road Freight Engineers														X
Road Freight Firemen													X	
Yard Engineers & Motormen														X
All Other Yard Service Employees													X	

Note: Three unions account for 60.3 percent of total employees, UTU - 24.4%; BRAC - 20.7%; and BMWE - 15.2%.

Source: National Railway Labor Conference.

Legend:

BRAC - Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees.
BMWE - Brotherhood of Maintenance of Way Employees
IBEW - International Brotherhood of Electrical Workers
IBBB - International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers
BRC - Brotherhood of Railway Carmen of United States and Canada
IAM - International Association of Machinists and Aerospace Workers
SMW - Sheet Metal Workers' International Association
IBF&O - International Brotherhood of Firemen and Oilers
BRS - Brotherhood of Railroad Signalmen
HRE - Hotel and Restaurant Employees and Bartenders' International Union
RYA - Railroad Yardmasters of America
ATDA - American Train Dispatchers' Association
UTU - United Transportation Union
BLE - Brotherhood of Locomotive Engineers
(Marine employees belong to various marine unions not listed above.)

Table VII-11

THE NUMBER OF OVERHEATED JOURNALS*
HAS STEADILY DECLINED

Year	Overheated Journals	Frt. Car Miles (millions)	Overheated Journals Per Million Car-Miles
1971	15 556	33 425	.47
1972	15 750	34 348	.46
1973	15 801	35 592	.44
1974	15 561	35 048	.44
1975	14 477	31 225	.46
1976	13 192	32 686	.40
1977	12 977	32 963	.39
1978	11 917	32 835	.36
1979	11 895	32 658	.36
1980	8 519	31 049	.27
1981	8 187	27 928	.29
----------INDEX----------			
1971	100	100	100
1972	101	103	98
1973	102	106	94
1974	100	105	94
1975	93	93	98
1976	85	98	85
1977	83	99	83
1978	77	98	77
1979	76	98	77
1980	55	93	57
1981	53	84	62

*A freight car journal bearing overheated due to excessive friction between wheel bearing and journal, lack of lubricant or foreign matter--frequently referred to as "Hot Box".

Source: Mechanical Division, AAR.

Table VII-12

THE AVERAGE NUMBER OF FREIGHT CAR TRIPS PER YEAR HAS DECLINED

Average Trips Per Year By Car Type

Year	Box	Covered Hoppers	Refrigerators	Gondolas	OT Hoppers	Flats	Tanks	All Cars
1971	15.2	16.6	10.3	17.6	23.8	26.5	13.2	18.2
1972	15.7	17.6	11.3	18.8	24.8	29.0	10.0	18.7
1973	16.2	17.3	11.1	20.6	27.0	29.9	10.0	19.5
1974	14.6	16.3	10.8	20.0	27.5	26.7	9.8	18.6
1975	12.2	15.2	10.3	16.5	26.4	22.1	8.5	16.6
1976	12.8	15.7	10.3	16.9	25.4	24.2	8.5	16.9
1977	12.9	15.2	9.9	16.1	23.1	25.3	8.5	16.5
1978	12.7	15.1	10.7	16.5	22.2	25.8	8.2	16.5
1979	11.7	14.3	10.2	17.3	25.5	24.3	8.1	16.5
1980	10.7	13.7	10.0	17.8	24.8	20.8	7.7	15.8
1981	9.7	11.8	8.9	17.8	25.3	21.0	7.3	15.1
----------	----------	----------	INDEX	----------	----------	----------	----------	----------
1971	100	100	100	100	100	100	100	100
1972	103	106	110	107	104	109	76	103
1973	107	104	108	117	113	113	76	107
1974	96	98	105	114	116	101	74	102
1975	80	92	100	94	111	83	64	91
1976	84	95	100	96	107	91	64	93
1977	85	92	96	91	97	95	64	91
1978	84	91	104	94	93	97	62	91
1979	77	86	99	98	107	92	61	91
1980	70	83	97	101	104	78	58	87
1981	64	71	86	101	106	79	55	83

Source: Transportation Division, AAR.

VIII. PROFILES

Profile VIII-1

THE ASSOCIATION OF AMERICAN RAILROADS
American Railroads Buildings
1920 L Street, N.W.
Washington, D.C. 20036

Inception

The AAR was established in 1934 as an umbrella organization consolidating a number of smaller, more specialized groups. Among its forerunners were the Master Car Builders, the General Time Convention, the American Railway Association, the Associaton of Railway Executives, the Railway Accounting Officers Association, the Railway Treasury Officers Association, the Bureau of Railway Economics and the Bureau for the Safe Transportation of Explosives and Other Dangerous Articles.

Services Provided

The AAR serves its members in matters that require joint handling to better enable the railroads to contribute toward the purposes of the national transportation policy set forth by Congress. These matters include operations, maintenance, safety, research, economics, finance, accounting, data systems and public information. In addition, the AAR represents the railroads before the courts, administrative tribunals, Congressional committees and other governmental bodies. One of the Association's most important functions is to work with committees made up of representatives of member railroads on matters affecting the progress of the industry as a whole.

Membership (1982)

38 Class I line-haul roads in the U.S.
14 Class II line-haul roads in the U.S.
80 Class III line-haul and switching and terminal roads in the U.S.
1 Leased-line railroad
5 Canadian lines
5 Mexican lines
77 Associate members

Composition of Board of Directors

The Board of Directors is composed of the Presidents, Chairmen, Trustees, Receivers and Chief Executive Officers (or other such officers or directors approved by the Board) of 19 individual railroads, and the President of the AAR who is Ex Officio Chairman.

Departmental Organization

Administrative and Executive
Legislative
Research and Test
Economics and Finance
Operations and Maintenance
Law
Information and Public Affairs
Intermodal Policy Studies Group
Railinc

Profile VIII-2

AMERICAN SHORT LINE RAILROAD ASSOCIATION
2000 Massachusetts Avenue, NW
Washington, D.C. 20036

Inception

In 1913, representatives of 22 short line railroads organized the Short Line Railroad Association of the Southeast. Accumulated experience led to the general belief that this Association should become national in scope, and subsequently the name was changed to The American Short Line Railroad Association. The general office of the Association was established in Washington, D.C. in 1917.

Services Rendered

Services provided by the ASLRA for its nationwide membership include keeping them informed of all proposed rules and regulations and matters of current interest; statutory agent functions; legal consultation pertinent to proceedings before the various agencies; representation before the various Governmental bodies and Committees of Congress on pending and proposed legislation; retention of a close relationship with the Association of American Railroads through membership on the various AAR Committees; and nationwide representation on all rate associations to insure protection of member lines' interests on traffic-related subjects.

Membership (September 1982)

263 railroads

Source: American Short Line Railroad Association.

Profile VIII-3

FRUIT GROWERS EXPRESS
1625 K Street, NW
Washington, D.C. 20006

Inception

Fruit Growers Express was incorporated March 18, 1920.

Ownership

Ten railroads.

Operating Characteristics

Supplies refrigerator cars and piggyback trailers and furnishes protective services to railroads for transportation of perishables. Owns car shops for building and repair of cars.

Equipment Ownership (12/31/81)[1/]

10,787 refrigerator cars
612 refrigerated trailers

Financial Data (1981)

($ amounts in thousands)

$169,435 - Total Assets
96,329 - Total Liabilities
73,106 - Stockholders' Equity
86,809 - Total Revenues
75,558 - Costs and Expenses
5,521 - Net Earnings

1/ Two other railroad-owned refrigerator car companies--Fruit Express and Merchants Despatch Transportation Corp.--also own refrigerated equipment.

Source: Annual Stockholders' Report.

Profile VIII-4

NATIONAL RAILWAY LABOR CONFERENCE
1901 L Street, N.W.
Suite 500
Washington, D.C. 20036

Inception

Established in Chicago, Illinois, October 2, 1962--became operational January 1, 1963. Moved to Washington, D.C. in September 1968.

Services Provided

NRLC represents the railroad industry in bargaining of national labor issues. They advise railroads on labor related matters, including the interpretation of contracts. NRLC frequently presents testimony before Congressional committees. The scope of their representation of the industry extends to virtually all railroads, except Amtrak.

Source: National Railway Labor Conference.

Profile VIII-5

RAILROAD RATE BUREAUS

There Are Three Major Rate Bureaus[1/]

Traffic Executive Association
Eastern Railroads
1250 Broadway
New York, New York 10001

Southern Freight Association
151 Ellis Street, N.E.
Atlanta, Georgia 30335

Western Railroad Traffic Association
222 South Riverside Plaza
Suite 1200
Chicago, Illinois 60606

Most railroad rates are published in a bureau tariff, which, in effect, is the price list for all lines operating in a territory.

There Are Five Major Rate Territories

Eastern Territory
Southern Territory
Western Territory
Southwestern Territory
Mountain-Pacific Territory

1/ There are also other smaller rate bureaus in the West.

Source: Various.

Profile VIII-6

RAILROAD RETIREMENT BOARD
844 Rush Street
Chicago, Illinois 60611

Background

The first Railroad Retirement Act, enacted on June 27, 1934, was declared unconstitutional by the Supreme Court before it became operational. A new retirement bill was enacted on August 29, 1935. This bill was also challenged on the grounds that neither the railroads nor the employees could be forced to contribute to annuity payments. At the suggestion of President Roosevelt, the President of the Association of American Railroads and the Chairman of the Railway Labor Executives' Association formed a joint conference to work out a solution to the pension issue. The conference's proposals resulted in the Railroad Retirement Act of 1937. Since that time, there have been many amendments and additions to the Act.

Functions of the Board

To administer, under Federal control, a retirement, unemployment and sickness benefit system covering railroad workers engaged in interstate commerce, and employees of railroad labor organizations and their subordinate units, and railroad associations.

Source: Railroad Retirement Board, 1955 Annual Report.

Profile VIII-7

RAILWAY PROGRESS INSTITUTE
700 North Fairfax Street
Alexandria, Virginia 22314

Inception

Organized as the Railway Business Association in 1908. Name changed to Railway Progress Institute in 1955.

Services Provided

Railway Progress Institute is a national association that represents about 150 railroad equipment and supply companies. Primarily, their services relate to governmental affairs and technical operations in connection with the Association of American Railroads.

Source: Railway Progress Institute.

Profile VIII-8

TRAILER TRAIN
300 South Wacker Drive
Chicago, Illinois 60606

Inception

Trailer Train was created November 9, 1955 and began operations March 17, 1956, predicated upon a need to meet public demand for TOFC service--with emphasis on uniform design characteristics to permit expeditious interchanging of traffic. Trailer Train commenced operations with a fleet of 500 cars. The fleet was expanded in the early 1960's to include double and triple deck rack cars for the transportation of new automobiles. Other specialized flat cars were added in subsequent years.

Ownership

Thirty-two railroads.

Operational Characteristics

Free-running fleet available to railroads upon demand. Provides access to a large fleet of cars without incurring long-term financial obligations. Car-hire rates priced at levels below ICC rates.

Size of Fleet 12/31/81

90,999 TOFC Flat Cars
24,966 Box Cars
4,000 Gondolas

119,965

Financial Data (1981)

($ amounts in thousands)

$1,352,087 - Total Assets
947,873 - Total Liabilities
404,214 - Stockholders' Equity
492,371 - Operating Expenses
172,506 - Car Maintenance
21,650 - Net Income

Subsidiaries

"Railbox" established in 1974 to provide fleet of free-running box cars. "Railgon" formed in May 1979.

Source: Annual Stockholders' Report.

PROFILE VIII-9

RAILWAY ENGINEERING-MAINTENANCE SUPPLIERS ASSOCIATION

5600 Marina Drive

Holmes Beach, Florida 33510

Inception

Railway Engineering-Maintenance Suppliers Association, Inc. (REMSA) is the outgrowth of two predecessor associations, National Railway Appliances Association and Association of Track & Structure Suppliers. NRAA, under several different names had been in existence since 1894; AT&SS since 1914. These two associations were merged into REMSA in 1965.

Services Rendered

As stated in the Constitution & By-Laws of REMSA, the "purpose of this organization shall be to promote the welfare of transportation industries in carrying on the activities of its predecessors. Its activities shall be wholly educational , looking to the greatest advancement in the efficiency, safety, maintenance and operation thereof. It will cooperate in the development of conventions of Engineering, Maintenance, Research and Scientific Associations, and shall sponsor and hold Exhibitions of equipment, appliances and supplies held in conjunction with these meetings."

Membership

Membership is limited to corporations, firms and individuals engaged in the manufacture or sale of transportation equipment, appliances and supplies; engineers or contractors engaged in construction and/or maintenance of track facilities; also, publishers of the technical press and others associated with the transportation industry.

Source: Railway Engineering-Maintenance Suppliers Association.